

## SEQUENCE LISTING

<110> Fernandez-Salas, Ester  
Garay, Patton  
Aoki, Kei Roger

<120> Botulinum Toxin Screening Assays

<130> 17596 (BOT)

<150> US 60/547,591  
<151> 2004-02-24

<160> 32

<170> FastSEQ for Windows Version 4.0

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<212> PRT

<213> Homo sapiens

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 Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp  
 145 150 155 160  
 Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys  
 165 170 175  
 Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly  
 180 185 190  
 Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His  
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 Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly  
 210 215 220  
 Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr  
 225 230 235 240  
 Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln  
 245 250 255  
 Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu  
 260 265 270  
 Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu  
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 Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro  
 290 295 300  
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 305 310 315 320  
 Val Arg Leu Arg Leu Ala Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr  
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 Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp  
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 Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala  
 355 360 365  
 Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly  
 370 375 380  
 Phe Phe Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu  
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 Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile  
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 Ser Arg Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser  
 420 425 430  
 Met Ser Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Pro | Thr | Leu | Ala | Asn | Val | Ser | Glu | Leu | Glu | Leu | Pro | Ala | Asp |
| 435 |     | 440 |     |     |     |     |     |     | 445 |     |     |     |     |     |     |
| 450 |     |     |     |     |     |     | 455 |     |     | 460 |     |     |     |     |     |
| Pro | Lys | Trp | Glu | Leu | Ser | Arg | Ala | Arg | Leu | Thr | Leu | Gly | Lys | Pro | Leu |
| 465 |     |     |     |     |     |     | 470 |     |     | 475 |     |     |     |     | 480 |
| Gly | Glu | Gly | Cys | Phe | Gly | Gln | Val | Val | Met | Ala | Glu | Ala | Ile | Gly | Ile |
|     |     |     |     |     |     |     | 485 |     |     | 490 |     |     |     |     | 495 |
| Asp | Lys | Asp | Arg | Ala | Ala | Lys | Pro | Val | Thr | Val | Ala | Val | Lys | Met | Leu |
|     |     |     |     |     |     |     | 500 |     |     | 505 |     |     |     |     | 510 |
| Lys | Asp | Asp | Ala | Thr | Asp | Lys | Asp | Leu | Ser | Asp | Leu | Val | Ser | Glu | Met |
|     |     |     |     |     |     |     | 515 |     |     | 520 |     |     |     |     | 525 |
| Glu | Met | Met | Lys | Met | Ile | Gly | Lys | His | Lys | Asn | Ile | Ile | Asn | Leu | Leu |
|     |     |     |     |     |     |     | 530 |     |     | 535 |     |     |     |     | 540 |
| Gly | Ala | Cys | Thr | Gln | Gly | Gly | Pro | Leu | Tyr | Val | Leu | val | Glu | Tyr | Ala |
|     |     |     |     |     |     |     | 545 |     |     | 550 |     |     |     |     | 560 |
| Ala | Lys | Gly | Asn | Leu | Arg | Glu | Phe | Leu | Arg | Ala | Arg | Arg | Pro | Pro | Gly |
|     |     |     |     |     |     |     | 565 |     |     | 570 |     |     |     |     | 575 |
| Leu | Asp | Tyr | Ser | Phe | Asp | Thr | Cys | Lys | Pro | Pro | Glu | Glu | Gln | Leu | Thr |
|     |     |     |     |     |     |     | 580 |     |     | 585 |     |     |     |     | 590 |
| Phe | Lys | Asp | Leu | Val | Ser | Cys | Ala | Tyr | Gln | Val | Ala | Arg | Gly | Met | Glu |
|     |     |     |     |     |     |     | 595 |     |     | 600 |     |     |     |     | 605 |
| Tyr | Leu | Ala | Ser | Gln | Lys | Cys | Ile | His | Arg | Asp | Leu | Ala | Ala | Arg | Asn |
|     |     |     |     |     |     |     | 610 |     |     | 615 |     |     |     |     | 620 |
| Val | Leu | Val | Thr | Glu | Asp | Asn | Val | Met | Lys | Ile | Ala | Asp | Phe | Gly | Leu |
|     |     |     |     |     |     |     | 625 |     |     | 630 |     |     |     |     | 640 |
| Ala | Arg | Asp | Val | His | Asn | Leu | Asp | Tyr | Tyr | Lys | Lys | Thr | Thr | Asn | Gly |
|     |     |     |     |     |     |     | 645 |     |     | 650 |     |     |     |     | 655 |
| Arg | Leu | Pro | Val | Lys | Trp | Met | Ala | Pro | Glu | Ala | Leu | Phe | Asp | Arg | Val |
|     |     |     |     |     |     |     | 660 |     |     | 665 |     |     |     |     | 670 |
| Tyr | Thr | His | Gln | Ser | Asp | Val | Trp | Ser | Phe | Gly | Val | Leu | Leu | Trp | Glu |
|     |     |     |     |     |     |     | 675 |     |     | 680 |     |     |     |     | 685 |
| Ile | Phe | Thr | Leu | Gly | Gly | Ser | Pro | Tyr | Pro | Gly | Ile | Pro | Val | Glu | Glu |
|     |     |     |     |     |     |     | 690 |     |     | 695 |     |     |     |     | 700 |
| Leu | Phe | Lys | Leu | Leu | Lys | Glu | Gly | His | Arg | Met | Asp | Lys | Pro | Ala | Asn |
|     |     |     |     |     |     |     | 705 |     |     | 710 |     |     |     |     | 720 |
| Cys | Thr | His | Asp | Leu | Tyr | Met | Ile | Met | Arg | Glu | Cys | Trp | His | Ala | Ala |
|     |     |     |     |     |     |     | 725 |     |     | 730 |     |     |     |     | 735 |
| Pro | Ser | Gln | Arg | Pro | Thr | Phe | Lys | Gln | Leu | Val | Glu | Asp | Leu | Asp | Arg |
|     |     |     |     |     |     |     | 740 |     |     | 745 |     |     |     |     | 750 |
| Val | Leu | Thr | Val | Thr | Ser | Thr | Asp | Glu | Tyr | Leu | Asp | Leu | Ser | Ala | Pro |
|     |     |     |     |     |     |     | 755 |     |     | 760 |     |     |     |     | 765 |
| Phe | Glu | Gln | Tyr | Ser | Pro | Gly | Gly | Gln | Asp | Thr | Pro | Ser | Ser | Ser | Ser |
|     |     |     |     |     |     |     | 770 |     |     | 775 |     |     |     |     | 780 |
| Ser | Gly | Asp | Asp | Ser | Val | Phe | Ala | His | Asp | Leu | Leu | Pro | Pro | Ala | Pro |
|     |     |     |     |     |     |     | 785 |     |     | 790 |     |     |     |     | 800 |
| Pro | Ser | Ser | Gly | Gly | Ser | Arg | Thr |     |     |     |     |     |     |     |     |
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| tcggaccgcg  | gcaactacac  | ctgcgtcgt   | gagaacaagt | ttggcagcat  | ccggcagacg  | 720  |
| tacacgctgg  | acgtgctgg   | gcgctcccc   | cacgggccc  | tcctgcaggc  | ggggctgcc   | 780  |
| gccaaccaga  | cggcgggtgc  | ggcagcgcac  | gtggagttcc | actgcaaggt  | gtacagtjac  | 840  |
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<211> 806

<212> PRT

<213> Homo sapiens

<400> 4

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| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| val | Ala | Gly | Ala | Ser | Ser | Glu | Ser | Leu | Gly | Thr | Glu | Gln | Arg | Val | Val |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Gly | Arg | Ala | Ala | Glu | Val | Pro | Gly | Pro | Glu | Pro | Gly | Gln | Gln | Glu | Gln |
|     |     |     |     | 35  |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Leu | Val | Phe | Gly | Ser | Gly | Asp | Ala | Val | Glu | Leu | Ser | Cys | Pro | Pro | Pro |
|     |     |     |     |     |     | 50  |     | 55  |     |     | 60  |     |     |     |     |
| Gly | Gly | Gly | Pro | Met | Gly | Pro | Thr | Val | Trp | Val | Lys | Asp | Gly | Thr | Gly |
|     |     |     |     |     | 65  |     | 70  |     | 75  |     |     |     | 80  |     |     |
| Leu | Val | Pro | Ser | Glu | Arg | Val | Leu | Val | Gly | Pro | Gln | Arg | Leu | Gln | Val |
|     |     |     |     |     | 85  |     |     | 90  |     |     |     | 95  |     |     |     |
| Leu | Asn | Ala | Ser | His | Glu | Asp | Ser | Gly | Ala | Tyr | Ser | Cys | Arg | Gln | Arg |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Leu | Thr | Gln | Arg | Val | Leu | Cys | His | Phe | Ser | Val | Arg | Val | Thr | Asp | Ala |
|     |     |     |     |     | 115 |     |     | 120 |     |     | 125 |     |     |     |     |
| Pro | Ser | Ser | Gly | Asp | Asp | Glu | Asp | Gly | Glu | Asp | Glu | Ala | Glu | Asp | Thr |
|     |     |     |     |     | 130 |     | 135 |     |     | 140 |     |     |     |     |     |
| Gly | Val | Asp | Thr | Gly | Ala | Pro | Tyr | Trp | Thr | Arg | Pro | Glu | Arg | Met | Asp |
|     |     |     |     |     | 145 |     | 150 |     |     | 155 |     |     |     | 160 |     |
| Lys | Lys | Leu | Leu | Ala | Val | Pro | Ala | Ala | Asn | Thr | Val | Arg | Phe | Arg | Cys |
|     |     |     |     |     | 165 |     |     | 170 |     |     |     | 175 |     |     |     |
| Pro | Ala | Ala | Gly | Asn | Pro | Thr | Pro | Ser | Ile | Ser | Trp | Leu | Lys | Asn | Gly |
|     |     |     |     |     | 180 |     |     | 185 |     |     |     | 190 |     |     |     |
| Arg | Glu | Phe | Arg | Gly | Glu | His | Arg | Ile | Gly | Gly | Ile | Lys | Leu | Arg | His |

Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly  
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 210 215 220  
 Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr  
 225 230 235 240  
 Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln  
 245 250 255  
 Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu  
 260 265 270  
 Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu  
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 Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro  
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 Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu  
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 Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg  
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 Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu  
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 Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr  
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 His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe  
 675 680 685  
 Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe  
 690 695 700  
 Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr

6

|   |         |
|---|---------|
| 705 His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser | 710 720 |
| 725 730 735   |         |
| Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu     |         |
| 740 745 750   |         |
| Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro Phe Glu     |         |
| 755 760 765   |         |
| Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Gly         |         |
| 770 775 780   |         |
| Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro Pro Ser     |         |
| 785 790 795 800   |         |
| Ser Gly Gly Ser Arg Thr   |         |
| 805   |         |

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<212> DNA  
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ccagagcccg gccagcagga gcagggtggc ttccggcagcg gggatgtgtt ggagctgagc 180  
tgtccccccgc ccgggggttgg tcccatgggg cccactgtct gggtaaggaa tggcacagg 240  
ctggtgccct cggagcgtgt cctgggtgggg ccccagcggc tgcaagggtct gaatgcctcc 300  
cacaggact ccggggccta cagctgccgg cagcggctca cgcagcgcgt actgtgccac 360  
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gctgaggaca cagggtgtgaa cacagggggcc ccttactgga cacggcccgaa gcggatggac 480  
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aacccactc cttccatctc ctggctgaag aacggcaggg agtccgcgg cgagcaccgc 600  
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tacacgctgg acgtgtgtgaa gcgtccccc caccggccca tcctgcaggc ggggctgccc 780  
gccaaccaga cggcgggtgt gggcagcgcgt gtggagttcc actcgaaggat gtacagtgac 840  
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gacggcacac cttacgttac cgtgtcaag gtgtccctgg agtccaacgc gtccatgagc 960  
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<212> PRT  
<213> Homo sapiens

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 Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro  
 50 55 60  
 Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly  
 65 70 75 80  
 Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val  
 85 90 95  
 Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg  
 100 105 110  
 Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala  
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 Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr  
 130 135 140  
 Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp  
 145 150 155 160  
 Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys  
 165 170 175  
 Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly  
 180 185 190  
 Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His  
 195 200 205  
 Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly  
 210 215 220  
 Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr  
 225 230 235 240  
 Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln  
 245 250 255  
 Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu  
 260 265 270  
 Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu  
 275 280 285  
 Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro  
 290 295 300  
 Tyr Val Thr Val Leu Lys Val Ser Leu Glu Ser Asn Ala Ser Met Ser  
 305 310 315 320  
 Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly  
 325 330 335  
 Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys  
 340 345 350  
 Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu  
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 Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys  
 370 375 380  
 Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp  
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 Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met  
 405 410 415  
 Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala  
 420 425 430  
 Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys  
 435 440 445  
 Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp  
 450 455 460  
 Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys  
 465 470 475 480  
 Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu  
 485 490 495  
 Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu  
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 Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg

|   | 515 | 520 | 525 |
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| Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu |     |     |     |
| 530   | 535 | 540 |     |
| Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr |     |     |     |
| 545   | 550 | 555 | 560 |
| His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe |     |     |     |
| 565   | 570 | 575 |     |
| Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe |     |     |     |
| 580   | 585 | 590 |     |
| Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr |     |     |     |
| 595   | 600 | 605 |     |
| His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser |     |     |     |
| 610   | 615 | 620 |     |
| Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu |     |     |     |
| 625   | 630 | 635 | 640 |
| Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro Phe Glu |     |     |     |
| 645   | 650 | 655 |     |
| Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Gly     |     |     |     |
| 660   | 665 | 670 |     |
| Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro Pro Ser |     |     |     |
| 675   | 680 | 685 |     |
| Ser Gly Gly Ser Arg Thr   |     |     |     |
| 690   |     |     |     |

&lt;210&gt; 7

&lt;211&gt; 2409

&lt;212&gt; DNA

&lt;213&gt; Bos taurus

&lt;400&gt; 7

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| gccctcggtt  | ccccgggggt   | ggagccccgc  | gtcgccgcca  | gagcggcaga  | gttccgggc   | 120  |
| cccgagccca  | ccccgcagga   | gcgggcctt   | ggcagcgggg  | acaccgttga  | gttgagctgc  | 180  |
| cgttgcgg    | cgggggtgtt   | cacagagccc  | accgtctggg  | tgaaggacgg  | cgtgggcctg  | 240  |
| gcgccttcgg  | accgcgttct   | ggtggggccg  | cagcggctac  | aggtgctcaa  | cgcctccac   | 300  |
| gaggacgcgg  | gaggcttacag  | ctgcccggag  | cgcctcttcc  | agccgctgtc  | gtgccttcc   | 360  |
| agcgtgcgcg  | tgacagatgc   | tccgtcctca  | ggggatgacg  | aggtgtggga  | cgacgaggcc  | 420  |
| gaggacacag  | ctggggcccc   | ttacttggacg | ggcctttagc  | ggatggacaa  | gaagctgcta  | 480  |
| gcgggtccgg  | ccgccaacac   | gttgccttc   | cgctgcccag  | ctgttggcaa  | ccccacgcca  | 540  |
| tccatcacct  | ggctgaagaa   | cggcaaggag  | ttccggggcg  | agcaccgcata | cgggggaaatc | 600  |
| aaactgcggc  | agcagcagt    | gagcttggtc  | atggagagcg  | tgggtccctc  | ggaccgcggc  | 660  |
| aactacacgt  | gcgtcgttga   | gaacaagttc  | ggcagaatcc  | agcagacacta | caccctggac  | 720  |
| gtgttggagc  | gctctccgca   | ccggcccatc  | ctacaggccg  | ggctgcccgc  | taaccagaca  | 780  |
| gccgtgttgg  | gcagcgtatgt  | ggagttccac  | tgcaaggctt  | acagcgcacgc | ccagccccac  | 840  |
| atccagtggc  | tcaaggcacgt  | ggaggttgaac | ggcagcaagg  | tggggcccgaa | cggcacgccc  | 900  |
| tacgttaccgc | tgctcaagac   | ggcgggcgtt  | aacaccaccg  | acaaggagct  | agaggttcta  | 960  |
| tccttgcgca  | atgttaccc    | tgaggacgcg  | ggggagtaca  | catgtctggc  | gggcaattct  | 1020 |
| atcggtttt   | cccatcaact   | tgcgtggctg  | gtgggtctgc  | cagctgagga  | ggagctggtg  | 1080 |
| gaagccgggt  | aggctggccg   | tgttttcgcg  | ggtgtccctc  | gctacgggtt  | gggtttccctc | 1140 |
| cttttccatcc | ttggccgttgc  | cgcccttacg  | ctctaccgc   | tgaggagccc  | ccctaagaag  | 1200 |
| ggccctgggt  | cgcccgcgt    | gcacaaggtc  | tcccgttcc   | cgctcaagcg  | acaggtgtcc  | 1260 |
| ttggagttcca | gctcatccat   | gagctccaac  | acaccgttgg  | tacgttgcgt  | ccggctgtca  | 1320 |
| tcgggcgagg  | ccccccaccc   | ggccaaacgtc | tctgagctcg  | agctgcccgc  | cgaccccaag  | 1380 |
| tgggagctgt  | ccccggcccc   | gctgaccctg  | ggcaaggctc  | ttggggaggg  | ctgttccggc  | 1440 |
| cagggttca   | ttggcagagggc | cattggcata  | gacaaggacc  | gaggttccaa  | gcctgttcc   | 1500 |
| gtggccgtga  | agatgttggaa  | agatgacgc   | acggataagg  | acttatcgga  | cctgggtgtcc | 1560 |
| gagatggaga  | tgtatggaaat  | gatggaaaaa  | cacaagaaca  | ttatcaaccc  | gttggcgcc   | 1620 |
| tgcacgcagg  | gcggggccctt  | gtacgttgcgt | gtggagttacg | cgcccaagg   | caacgttgcgg | 1680 |
| gaataacctgc | gggcacggcg   | gccccccgggc | actgactact  | ccttcgacac  | ctggcgctg   | 1740 |
| cccgaggagc  | agcttaccc    | caaagacctg  | gtgttccgtc  | ccttaccagg  | ggcgcggggc  | 1800 |
| atggagttacc | ttggccgttgc  | gaatgttgc   | cacaggacc   | tggggccccc  | caacgttgcgt | 1860 |
| gtgacttgggg | acaacgttgc   | gaaaatcgcc  | gacttcggcc  | tggcttgcgt  | ctgtcacaac  | 1920 |
| ctcgactact  | acaaaaagac   | cacaaacggc  | cgccttcccg  | tgaagtggat  | ggcaccccgag | 1980 |

gccttggtttgc accgcgtcta caccaccaa agtgacgtct ggtccttcgg ggtcctgctc 2040  
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 aagctgctga aggaaggcca ccgcattggac aagccggcca actgcacgca tgacctgtac 2160  
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 <212> PRT  
 <213> Bos taurus

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 35 40 45  
 Ala Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys Arg Leu Pro Ala  
 50 55 60  
 Gly Val Pro Thr Glu Pro Thr Val Trp Val Lys Asp Gly Val Gly Leu  
 65 70 75 80  
 Ala Pro Ser Asp Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val Leu  
 85 90 95  
 Asn Ala Ser His Glu Asp Ala Gly Ala Tyr Ser Cys Arg Gln Arg Leu  
 100 105 110  
 Ser Gln Arg Leu Leu Cys Leu Phe Ser Val Arg Val Thr Asp Ala Pro  
 115 120 125  
 Ser Ser Gly Asp Asp Glu Gly Gly Asp Asp Glu Ala Glu Asp Thr Ala  
 130 135 140  
 Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu  
 145 150 155 160  
 Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly  
 165 170 175  
 Asn Pro Thr Pro Ser Ile Thr Trp Leu Lys Asn Gly Lys Glu Phe Arg  
 180 185 190  
 Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg Gln Gln Trp Ser  
 195 200 205  
 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys  
 210 215 220  
 Val Val Glu Asn Lys Phe Gly Arg Ile Gln Gln Thr Tyr Thr Leu Asp  
 225 230 235 240  
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro  
 245 250 255  
 Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys  
 260 265 270  
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu  
 275 280 285  
 Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val  
 290 295 300  
 Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu  
 305 310 315 320  
 Ser Leu Arg Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu  
 325 330 335  
 Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val  
 340 345 350  
 Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Gly Glu Ala Gly Gly Val  
 355 360 365  
 Phe Ala Gly Val Leu Ser Tyr Gly Leu Gly Phe Leu Leu Phe Ile Leu  
 370 375 380  
 Ala Val Ala Ala Val Thr Leu Tyr Arg Leu Arg Ser Pro Pro Lys Lys

|   |     |     |     |
|---|-----|-----|-----|
|   |     | 10  |     |
| 385   | 390 | 395 | 400 |
| Gly Leu Gly Ser Pro Ala Val His Lys Val Ser Arg Phe Pro Leu Lys |     |     |     |
| 405   | 410 | 415 |     |
| Arg Gln Val Ser Leu Glu Ser Ser Ser Met Ser Ser Asn Thr Pro     |     |     |     |
| 420   | 425 | 430 |     |
| Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Thr Leu Ala |     |     |     |
| 435   | 440 | 445 |     |
| Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser |     |     |     |
| 450   | 455 | 460 |     |
| Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly |     |     |     |
| 465   | 470 | 475 | 480 |
| Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Ala Ala |     |     |     |
| 485   | 490 | 495 |     |
| Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp |     |     |     |
| 500   | 505 | 510 |     |
| Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile |     |     |     |
| 515   | 520 | 525 |     |
| Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly |     |     |     |
| 530   | 535 | 540 |     |
| Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg |     |     |     |
| 545   | 550 | 555 | 560 |
| Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Thr Asp Tyr Ser Phe Asp |     |     |     |
| 565   | 570 | 575 |     |
| Thr Cys Arg Leu Pro Glu Glu Gln Leu Thr Phe Lys Asp Leu Val Ser |     |     |     |
| 580   | 585 | 590 |     |
| Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys |     |     |     |
| 595   | 600 | 605 |     |
| Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp |     |     |     |
| 610   | 615 | 620 |     |
| Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn |     |     |     |
| 625   | 630 | 635 | 640 |
| Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp |     |     |     |
| 645   | 650 | 655 |     |
| Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp |     |     |     |
| 660   | 665 | 670 |     |
| Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly |     |     |     |
| 675   | 680 | 685 |     |
| Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys |     |     |     |
| 690   | 695 | 700 |     |
| Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr |     |     |     |
| 705   | 710 | 715 | 720 |
| Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg Pro Thr |     |     |     |
| 725   | 730 | 735 |     |
| Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu Thr Val Thr Ser |     |     |     |
| 740   | 745 | 750 |     |
| Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro |     |     |     |
| 755   | 760 | 765 |     |
| Gly Gly Gln Asp Thr Pro Ser Ser Gly Ser Ser Gly Asp Asp Ser Val |     |     |     |
| 770   | 775 | 780 |     |
| Phe Ala His Asp Leu Leu Pro Pro Ala Pro Ser Gly Ser Gly Gly Ser |     |     |     |
| 785   | 790 | 795 | 800 |
| Arg Thr   |     |     |     |

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<212> DNA  
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&lt;210&gt; 10

&lt;211&gt; 802

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 10

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Val | Pro | Ala | Cys | Val | Leu | Val | Phe | Cys | Val | Ala | Val | Val | Ala |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |  |
| Gly | Ala | Thr | Ser | Glu | Pro | Pro | Gly | Pro | Glu | Gln | Arg | Val | Val | Arg | Arg |  |
|     |     |     |     |     |     |     |     |     | 20  |     |     | 25  |     |     | 30  |  |
| Ala | Ala | Glu | Val | Pro | Gly | Pro | Glu | Pro | Ser | Gln | Gln | Glu | Gln | Val | Ala |  |
|     |     |     |     |     |     |     |     |     | 35  |     |     | 40  |     |     | 45  |  |
| Phe | Gly | Ser | Gly | Asp | Thr | Val | Glu | Leu | Ser | Cys | His | Pro | Pro | Gly | Gly |  |
|     |     |     |     |     |     |     |     |     | 50  |     |     | 55  |     |     | 60  |  |
| Ala | Pro | Thr | Gly | Pro | Thr | Val | Trp | Ala | Lys | Asp | Gly | Thr | Gly | Leu | Val |  |
|     |     |     |     |     |     |     |     |     | 65  |     |     | 70  |     |     | 75  |  |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 80  |  |
| Ala | Ser | His | Arg | Ile | Leu | Val | Gly | Pro | Gln | Arg | Leu | Gln | Val | Leu | Asn |  |
|     |     |     |     |     |     |     |     |     | 85  |     |     | 90  |     |     | 95  |  |
| Ala | Ser | His | Glu | Asp | Ala | Gly | Val | Tyr | Ser | Cys | Gln | His | Arg | Leu | Thr |  |
|     |     |     |     |     |     |     |     |     | 100 |     |     | 105 |     |     | 110 |  |
| Arg | Arg | Val | Leu | Cys | His | Phe | Ser | Val | Arg | Val | Thr | Asp | Ala | Pro | Ser |  |
|     |     |     |     |     |     |     |     |     | 115 |     |     | 120 |     |     | 125 |  |
| Ser | Gly | Asp | Asp | Glu | Asp | Gly | Glu | Asp | Val | Ala | Glu | Asp | Thr | Gly | Ala |  |
|     |     |     |     |     |     |     |     |     | 130 |     |     | 135 |     |     | 140 |  |
| Pro | Tyr | Trp | Thr | Arg | Pro | Glu | Arg | Met | Asp | Lys | Lys | Leu | Leu | Ala | Val |  |

12

|   |                         |     |     |
|---|-------------------------|-----|-----|
| 145   | 150                     | 155 | 160 |
| Pro Ala Ala Asn Thr Val Arg Phe Arg Cys                         | Pro Ala Ala Gly Asn Pro |     |     |
| 165   | 170                     | 175 |     |
| Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu |                         |     |     |
| 180   | 185                     | 190 |     |
| His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val |                         |     |     |
| 195   | 200                     | 205 |     |
| Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val |                         |     |     |
| 210   | 215                     | 220 |     |
| Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu |                         |     |     |
| 225   | 230                     | 235 | 240 |
| Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn |                         |     |     |
| 245   | 250                     | 255 |     |
| Gln Thr Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr |                         |     |     |
| 260   | 265                     | 270 |     |
| Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn |                         |     |     |
| 275   | 280                     | 285 |     |
| Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys |                         |     |     |
| 290   | 295                     | 300 |     |
| Ser Trp Ile Ser Glu Asn Val Glu Ala Asp Ala Arg Leu Arg Leu Ala |                         |     |     |
| 305   | 310                     | 315 | 320 |
| Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr Leu Cys Arg Ala Thr Asn |                         |     |     |
| 325   | 330                     | 335 |     |
| Phe Ile Gly Val Ala Glu Lys Ala Phe Trp Leu Arg Val His Gly Pro |                         |     |     |
| 340   | 345                     | 350 |     |
| Gln Ala Ala Glu Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val |                         |     |     |
| 355   | 360                     | 365 |     |
| Tyr Ala Gly Val Leu Ser Tyr Gly Val Val Phe Phe Leu Phe Ile Leu |                         |     |     |
| 370   | 375                     | 380 |     |
| Val Val Ala Ala Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys |                         |     |     |
| 385   | 390                     | 395 | 400 |
| Gly Leu Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys |                         |     |     |
| 405   | 410                     | 415 |     |
| Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro |                         |     |     |
| 420   | 425                     | 430 |     |
| Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala |                         |     |     |
| 435   | 440                     | 445 |     |
| Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser |                         |     |     |
| 450   | 455                     | 460 |     |
| Arg Thr Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly |                         |     |     |
| 465   | 470                     | 475 | 480 |
| Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala |                         |     |     |
| 485   | 490                     | 495 |     |
| Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp |                         |     |     |
| 500   | 505                     | 510 |     |
| Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile |                         |     |     |
| 515   | 520                     | 525 |     |
| Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly |                         |     |     |
| 530   | 535                     | 540 |     |
| Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg |                         |     |     |
| 545   | 550                     | 555 | 560 |
| Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp |                         |     |     |
| 565   | 570                     | 575 |     |
| Ala Cys Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser |                         |     |     |
| 580   | 585                     | 590 |     |
| Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys |                         |     |     |
| 595   | 600                     | 605 |     |
| Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp |                         |     |     |
| 610   | 615                     | 620 |     |
| Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn |                         |     |     |
| 625   | 630                     | 635 | 640 |
| Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp |                         |     |     |
| 645   | 650                     | 655 |     |
| Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp |                         |     |     |

|   | 660 | 665 | 670 |
|---|-----|-----|-----|
| Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly |     |     |     |
| 675   | 680 | 685 |     |
| Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys |     |     |     |
| 690   | 695 | 700 |     |
| Glu Gly His Arg Met Asp Lys Pro Ala Ser Cys Thr His Asp Leu Tyr |     |     |     |
| 705   | 710 | 715 | 720 |
| Met Ile Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr |     |     |     |
| 725   | 730 | 735 |     |
| Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser |     |     |     |
| 740   | 745 | 750 |     |
| Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro |     |     |     |
| 755   | 760 | 765 |     |
| Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Gly Asp Asp Ser Val     |     |     |     |
| 770   | 775 | 780 |     |
| Phe Thr His Asp Leu Leu Pro Pro Gly Pro Pro Ser Asn Gly Gly Pro |     |     |     |
| 785   | 790 | 795 | 800 |
| Arg Thr   |     |     |     |

<210> 11  
<211> 2403  
<212> DNA  
<213> Mus musculus

<400> 11

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| gaggcctcctg | gtccagagca  | gcgagttgtg  | cggagacgg   | cagaggttcc  | agggcctgaa  | 120  |
| cctagccagc  | aggagcagt   | ggccttcggc  | agtggggaca  | ccgtggagct  | gagctccat   | 180  |
| cctccctggag | gtgcccccac  | agggcccacg  | gtctggcta   | aggatggta   | aggctctgtg  | 240  |
| gcctcccacc  | gcatcctgt   | ggggcctcag  | aggctgcaag  | tgctaaatgc  | ctcccacgaa  | 300  |
| gatgcagggg  | tctacagctg  | ccagcaccgg  | ctcaactccgc | gtgtgctgtg  | ccacttcagt  | 360  |
| gtgcgtgtaa  | catagtcgtcc | atccctagga  | gatgacgaag  | atggggagga  | cgtggctgaa  | 420  |
| gacacagggg  | ttcccttattt | gactcggccg  | gagcgaatgg  | ataagaact   | gtggctgtg   | 480  |
| ccagcccaa   | acactgtccg  | tttccgtc    | ccagctgtc   | gcaaccctac  | cccttcattc  | 540  |
| tcctggctga  | agaatggcaa  | agaattccga  | ggggagcatc  | gcattggggg  | catcaagctc  | 600  |
| cggcaccagc  | agtggagctt  | ggtcatggaa  | agtgtggta   | cctccgatcg  | tggcaactat  | 660  |
| acctgtgtag  | ttgagaacaa  | gtttggcagc  | atccggcaga  | catacacact  | ggatgtgtg   | 720  |
| gagcgtccc   | cacaccggcc  | catctgcag   | gctgggtgc   | cggccaacca  | gacagccatt  | 780  |
| ctaggcagt   | acgtggagtt  | ccactgcaag  | gtgtacagcg  | atgcacagcc  | acacatccag  | 840  |
| tggctgaagc  | acgtggaaagt | gaacggcagc  | aagggtggcc  | ctgacggcac  | gccctacgtc  | 900  |
| actgtactca  | agactgcagg  | cgctaaccacc | accgacaagg  | agcttagaggt | tctgtccttg  | 960  |
| cacaatgtca  | cctttgagga  | cgcggggag   | tacacctgtcc | tggggggcaa  | ttctattggg  | 1020 |
| ttttcccatc  | actctgcgt   | gctgggtgtg  | ctgccagctg  | aggaggagct  | gatggaaact  | 1080 |
| gatgaggctg  | gcagcgtgt   | cgcaggcg    | ctcagctacg  | gggtggcttt  | tttcctcttc  | 1140 |
| atccctggtg  | tggcagctgt  | gatactctgc  | cgcctgcgc   | gtcccccaaa  | gaagggcttg  | 1200 |
| ggctcgccca  | ccgtgcacaa  | ggtctctcgc  | ttcccgctta  | agcagacagg  | gtccttgaa   | 1260 |
| tctaactct   | ctatgaactc  | caacacaccc  | cttgtccgga  | ttggcccgct  | gtcctcagga  | 1320 |
| gaagggtcctg | ttctggccaa  | tgttctgaa   | cttgagctgc  | ctgtgacacc  | caagtggag   | 1380 |
| ctatccagga  | ccggcgtgac  | acttggtaag  | cctcttggag  | aaggctgttt  | tggacaggtg  | 1440 |
| gtcatggcag  | aagttatgg   | catgacaag   | gaccgtactg  | ccaaacgtgt  | caccgtggcc  | 1500 |
| gtgaagatgc  | tgaaaagatga | tgcgactgac  | aaggacactgt | cggacactgt  | atctgagatg  | 1560 |
| gagatgatga  | aatgtattgg  | caagcacaag  | aacatcatta  | acctgtgggg  | ggcgtgcaca  | 1620 |
| cagggtgggc  | ccctgtatgt  | gctgtggag   | tacgcagcca  | aggcaatct   | ccgggagttc  | 1680 |
| cttcgggcgc  | ggcggccccc  | aggcatggac  | tactccttg   | atggctgcag  | gtggccagag  | 1740 |
| gaacagctca  | cctgcaagga  | tctagtgtcc  | tgtgcctacc  | aggtggcacg  | gggcattggaa | 1800 |
| tacttggctt  | ctcagaagt   | tattcaca    | gacttggctg  | ccagaaacgt  | cctggtgacc  | 1860 |
| gaggacaatg  | tgtgaagat   | tgcgacttt   | ggcctggctc  | gagatgtgca  | caacctggac  | 1920 |
| tactacaaga  | agaccacaaa  | tggccggcta  | cctgtgaagt  | ggatggcacc  | agaggccctt  | 1980 |
| tttgaccgag  | tctacaccca  | ccagagtgtat | gtttggctt   | ttggtgcct   | cctctggag   | 2040 |
| atcttacgc   | ttgggggctc  | accgtatcct  | ggcatccag   | tggaaagagct | tttcaagctg  | 2100 |
| ttgaaagagg  | gccaccgc    | ggacaagcca  | gccagctgc   | cacatgac    | gtacatgatc  | 2160 |
| atgcggaat   | gttggcatgc  | ggtccttca   | cagaggccca  | ccttcaagca  | gttggtagag  | 2220 |

gat tagacc gcattcctcac tgtgacatca accgacgagt acttggacct ctccgtgccg 2280  
 tttgagcagt actcgccagg tggccaggac acgcctagct ccagctcgac cgagatgac 2340  
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<211> 800

<212> PRT

<213> Mus musculus

<400> 12

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 35 40 45  
 Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly  
 50 55 60  
 Ala Pro Thr Gly Pro Thr Val Trp Ala Lys Asp Gly Thr Gly Leu Val  
 65 70 75 80  
 Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn  
 85 90 95  
 Ala Ser His Glu Asp Ala Gly Val Tyr Ser Cys Gln His Arg Leu Thr  
 100 105 110  
 Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser  
 115 120 125  
 Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala  
 130 135 140  
 Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val  
 145 150 155 160  
 Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro  
 165 170 175  
 Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu  
 180 185 190  
 His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val  
 195 200 205  
 Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val  
 210 215 220  
 Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu  
 225 230 235 240  
 Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn  
 245 250 255  
 Gln Thr Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr  
 260 265 270  
 Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn  
 275 280 285  
 Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys  
 290 295 300  
 Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu Ser Leu  
 305 310 315 320  
 His Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly  
 325 330 335  
 Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val Leu Pro  
 340 345 350  
 Ala Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val Tyr Ala  
 355 360 365  
 Gly Val Leu Ser Tyr Gly Val Val Phe Phe Leu Phe Ile Leu Val Val  
 370 375 380  
 Ala Ala Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu  
 385 390 395 400  
 Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln  
 405 410 415  
 Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val

|   | 420 | 425 | 430 |
|---|-----|-----|-----|
| Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val | 435 | 440 | 445 |
| Leu Ala Asn Val                                 |     |     |     |
| Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu | 450 | 455 | 460 |
| Leu Ser Arg Thr                                 |     |     |     |
| Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys | 465 | 470 | 475 |
| Phe Gly Gln Val                                 |     |     | 480 |
| Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg | 485 | 490 | 495 |
| Thr Ala Lys Pro                                 |     |     |     |
| Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala | 500 | 505 | 510 |
| Thr Asp Lys Asp                                 |     |     |     |
| Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys | 515 | 520 | 525 |
| Met Ile Gly Lys                                 |     |     |     |
| His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys     | 530 | 535 | 540 |
| Thr Gln Gly Gly Pro                             |     |     |     |
| Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn | 545 | 550 | 555 |
| Leu Arg Glu Phe                                 |     |     | 560 |
| Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser | 565 | 570 | 575 |
| Phe Asp Ala Cys                                 |     |     |     |
| Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu | 580 | 585 | 590 |
| Val Ser Cys Ala                                 |     |     |     |
| Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser | 595 | 600 | 605 |
| Gln Lys Cys Ile                                 |     |     |     |
| His Arg Asp Leu Ala Ala Arg Asn Val Leu Val     | 610 | 615 | 620 |
| Thr Glu Asp Asn Val                             |     |     |     |
| Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp     | 625 | 630 | 635 |
| Val His Asn Leu Asp                             |     |     | 640 |
| Tyr Tyr Lys Thr Thr Asn Gly Arg Leu Pro Val     | 645 | 650 | 655 |
| Lys Trp Met Ala                                 |     |     |     |
| Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His     | 660 | 665 | 670 |
| Gln Ser Asp Val Trp                             |     |     |     |
| Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu | 675 | 680 | 685 |
| Gly Gly Ser Pro                                 |     |     |     |
| Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys     | 690 | 695 | 700 |
| Leu Leu Lys Glu Gly                             |     |     |     |
| His Arg Met Asp Lys Pro Ala Ser Cys Thr His Asp | 705 | 710 | 715 |
| Leu Tyr Met Ile                                 |     |     | 720 |
| Met Arg Glu Cys Trp His Ala Val Pro Ser Gln     | 725 | 730 | 735 |
| Arg Pro Thr Phe Lys                             |     |     |     |
| Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val | 740 | 745 | 750 |
| Thr Ser Thr Asp                                 |     |     |     |
| Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln     | 755 | 760 | 765 |
| Tyr Ser Pro Gly Gly                             |     |     |     |
| Gln Asp Thr Pro Ser Ser Ser Ser Gly Asp Asp Ser | 770 | 775 | 780 |
| Val Phe Thr                                     |     |     |     |
| His Asp Leu Leu Pro Pro Gly Pro Pro Ser Asn     | 785 | 790 | 795 |
| Gly Gly Pro Arg Thr                             |     |     | 800 |

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<212> DNA  
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<400> 13

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cctagccagc aggagcagggt ggccttcggc agtggggaca ccgtggagct gagctgccat 180  
cctccctggag gtgcccccac agggcccacg gtctgggcta aggatggta caggctgttg 240  
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gctgtgccag ccgcaaacac tgtcccttc cgctccccag ctgtggcaa ccctaccccc 480  
tccatctcct ggctgaagaa tggcaaagaa ttccgagggg agcatcgcat tggggcattc 540

|             |             |             |             |            |            |      |
|-------------|-------------|-------------|-------------|------------|------------|------|
| aagctccggc  | accagcagtg  | gagcttggtc  | atggaaagtg  | tgttaccctc | cgatcggtgc | 600  |
| aactataacct | gtgttagttga | gaacaagttt  | ggcagcatcc  | ggcagacata | cacactggat | 660  |
| gtgctggagc  | gctccccaca  | ccggcccatc  | ctgcaggctg  | ggctgccggc | caaccagaca | 720  |
| gccattctag  | gcagtgcacgt | ggagttccac  | tgcaagggtgt | acagcgatgc | acagccacac | 780  |
| atccagtggc  | tgaaggcacgt | ggaagtgaac  | ggcagcaagg  | tggccctga  | cggcacgccc | 840  |
| tacgtcactg  | tactcaagac  | tgcagggcgct | aacaccacccg | acaaggagct | agagggtctg | 900  |
| tccttgcaca  | atgtcaccctt | tgaggacgcg  | ggggaggtaca | cctgcctggc | gggcaattct | 960  |
| atggggtttt  | cccatcactc  | tgcgtggctg  | gtgggtctgc  | cagctgagga | ggagctgatg | 1020 |
| gaaaactgatg | aggctggcag  | cgtgtacgca  | ggcgtcctca  | gctacggggt | gtcttcttc  | 1080 |
| ctcttcatcc  | tttgtgggtgc | agctgtgata  | ctctgcccc   | tgcgcagtcc | cccaaagaag | 1140 |
| ggcttgggct  | cgcccacccgt | gcacaaggtc  | tctcgcttcc  | cgcttaagcg | acaggtgtcc | 1200 |
| ttggaatcta  | actcctctat  | gaactccaac  | acacccttgc  | tccggattgc | ccggctgtcc | 1260 |
| tcaggagaag  | gtccctgttct | ggcaaatgtt  | tctgaacttg  | agtcgcctgc | tgaccccaag | 1320 |
| tgggagctat  | ccaggaccg   | gctgacactt  | ggtaagcctc  | ttggagaagg | ctgcttgg   | 1380 |
| caggtggtca  | ttggcagaagc | tattggcatc  | gacaaggacc  | gtactgcca  | gcctgtcacc | 1440 |
| gtggccgtga  | agatgctgaa  | agatgatgcg  | actgacaagg  | acctgtcgg  | cctggtatct | 1500 |
| gagatggaga  | tgtatgaaaat | gattggcaag  | cacaagaaca  | tcattaacct | gctggggcgc | 1560 |
| tgcacacagg  | gtggggccctt | gtatgtctg   | ttggagtagc  | cagccaagg  | caatctccgg | 1620 |
| gagttccctt  | gggcgcggcg  | gcctccaggc  | atggactact  | ccttgatgc  | ctgcagctg  | 1680 |
| ccagaggaac  | agctcacctg  | caaggatcta  | gtgtcctgtg  | cctaccagg  | ggcacggggc | 1740 |
| atggaaatact | ttggctctca  | gaagtgtatt  | cacagagact  | tggctgccag | aaacgtcctg | 1800 |
| gtgaccgagg  | acaatgttat  | gaagattgcg  | gactttggcc  | tggctcgaga | tgtgcacaac | 1860 |
| ctggactact  | acaagaagac  | cacaatggc   | cggttaccc   | tgaagtggat | ggcaccagag | 1920 |
| gccctttttt  | accgagtc    | caccaccag   | agtgtatgtt  | ggcttttgg  | tgtccttc   | 1980 |
| tgggagatct  | ttacgctgg   | gggctcaccg  | tatcctggca  | tcccaagtgg | agagctttc  | 2040 |
| aagctgtga   | aagagggc    | ccgcattggac | aagccagcc   | gctgcacaca | tgacctgtac | 2100 |
| atgatcatgc  | gffaatgttg  | gcatgcgtg   | ccttcacaga  | ggcccacctt | caagcagttg | 2160 |
| gtagaggatt  | tagaccgcat  | cctcaactgtg | acatcaacc   | acgagtactt | ggacctctcc | 2220 |
| gtgcccttt   | agcagtactc  | gccaggtggc  | caggacacgc  | ctagctccag | ctcgccg    | 2280 |
| gatgactcgg  | tgttcaccca  | tgacctgct   | cccccagtc   | caccaggtaa | cgggggacct | 2340 |
| cgacgtga    |             |             |             |            |            | 2349 |

&lt;210&gt; 14

&lt;211&gt; 782

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 14

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Pro | Ala | Cys | Val | Leu | Val | Phe | Cys | Val | Ala | Val | Val | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |     |
| Gly | Ala | Thr | Ser | Glu | Pro | Pro | Gly | Pro | Glu | Gln | Arg | Val | Val | Arg | Arg |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ala | Ala | Glu | Val | Pro | Gly | Pro | Glu | Pro | Ser | Gln | Gln | Glu | Gln | Val | Ala |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     | 45  |     |     |     |
| Phe | Gly | Ser | Gly | Asp | Thr | Val | Glu | Leu | Ser | Cys | His | Pro | Pro | Gly | Gly |
|     |     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |
| Ala | Pro | Thr | Gly | Pro | Thr | Val | Trp | Ala | Lys | Asp | Gly | Thr | Gly | Leu | Val |
|     |     |     |     | 65  |     |     |     | 70  |     |     |     | 75  |     |     | 80  |
| Ala | Ser | His | Arg | Ile | Leu | Val | Gly | Pro | Gln | Arg | Leu | Gln | Val | Leu | Asn |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |     |     |     |
| Ala | Ser | His | Glu | Asp | Ala | Gly | Val | Tyr | Ser | Cys | Gln | His | Arg | Leu | Thr |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Arg | Arg | Val | Leu | Cys | His | Phe | Ser | Val | Arg | Val | Thr | Gly | Ala | Pro | Tyr |
|     |     |     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |
| Trp | Thr | Arg | Pro | Glu | Arg | Met | Asp | Lys | Lys | Leu | Leu | Ala | Val | Pro | Ala |
|     |     |     |     | 130 |     |     |     | 135 |     |     |     | 140 |     |     |     |
| Ala | Asn | Thr | Val | Arg | Phe | Arg | Cys | Pro | Ala | Ala | Gly | Asn | Pro | Thr | Pro |
|     |     |     |     | 145 |     |     |     | 150 |     |     |     | 155 |     |     | 160 |
| Ser | Ile | Ser | Trp | Leu | Lys | Asn | Gly | Lys | Glu | Phe | Arg | Gly | Glu | His | Arg |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |     |     |     |
| Ile | Gly | Gly | Ile | Lys | Leu | Arg | His | Gln | Gln | Trp | Ser | Leu | Val | Met | Glu |
|     |     |     |     | 180 |     |     |     | 185 |     |     |     | 190 |     |     |     |
| Ser | Val | Val | Pro | Ser | Asp | Arg | Gly | Asn | Tyr | Thr | Cys | Val | Val | Glu | Asn |
|     |     |     |     | 195 |     |     |     | 200 |     |     |     | 205 |     |     |     |

Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu Glu Arg  
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 Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Gln Thr  
 225 230 235 240  
 Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp  
 245 250 255  
 Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser  
 260 265 270  
 Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys Thr Ala  
 275 280 285  
 Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu Ser Leu His Asn  
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 Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser  
 305 310 315 320  
 Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val Leu Pro Ala Glu  
 325 330 335  
 Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val Tyr Ala Gly Val  
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 Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser  
 370 375 380  
 Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln Val Ser  
 385 390 395 400  
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 405 410 415  
 Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val Ser Glu  
 420 425 430  
 Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr Arg Leu  
 435 440 445  
 Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met  
 450 455 460  
 Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro Val Thr  
 465 470 475 480  
 Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser  
 485 490 495  
 Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys  
 500 505 510  
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 Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg  
 530 535 540  
 Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys Arg Leu  
 545 550 555 560  
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 Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp Ser Phe  
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 Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg  
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 690 695 700  
 Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu  
 705 710 715 720

Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser Thr Asp Glu Tyr  
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 <212> DNA  
 <213> Rattus norvegicus

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 <212> PRT  
 <213> Rattus norvegicus

<400> 16

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 35 40 45  
 Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly  
 50 55 60  
 Ala Pro Thr Gly Pro Thr Leu Trp Ala Lys Asp Gly Val Gly Leu Val  
 65 70 75 80  
 Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn  
 85 90 95  
 Ala Thr His Glu Asp Ala Gly Val Tyr Ser Cys Gln Gln Arg Leu Thr  
 100 105 110  
 Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser  
 115 120 125  
 Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala  
 130 135 140  
 Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val  
 145 150 155 160  
 Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro  
 165 170 175  
 Thr Pro Ser Ile Pro Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu  
 180 185 190  
 His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val  
 195 200 205  
 Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val  
 210 215 220  
 Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu  
 225 230 235 240  
 Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn  
 245 250 255  
 Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr  
 260 265 270  
 Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn  
 275 280 285  
 Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys  
 290 295 300  
 Ser Trp Ile Ser Glu Asn Val Glu Ala Asp Ala Arg Leu Arg Leu Ala  
 305 310 315 320  
 Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr Leu Cys Arg Ala Thr Asn  
 325 330 335  
 Phe Ile Gly Val Ala Glu Lys Ala Phe Trp Leu Arg Val His Gly Pro  
 340 345 350  
 Gln Ala Ala Glu Glu Glu Leu Met Glu Val Asp Glu Ala Gly Ser Val  
 355 360 365  
 Tyr Ala Gly Val Leu Ser Tyr Gly Val Gly Phe Phe Leu Phe Ile Leu  
 370 375 380  
 Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys  
 385 390 395 400  
 Gly Leu Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys  
 405 410 415  
 Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro  
 420 425 430  
 Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala  
 435 440 445  
 Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser  
 450 455 460  
 Arg Thr Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly  
 465 470 475 480  
 Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala  
 485 490 495  
 Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp  
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Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile  
 515 520 525  
 Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly  
 530 535 540  
 Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg  
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 Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp  
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 Ala Cys Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser  
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 Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys  
 595 600 605  
 Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp  
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 625 630 635 640  
 Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp  
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 Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr  
 705 710 715 720  
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 755 760 765  
 Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Gly Asp Asp Ser Val  
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 <213> Rattus norvegicus

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&lt;210&gt; 18

&lt;211&gt; 800

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 18

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Val | Pro | Ala | Cys | Val | Leu | Val | Phe | Cys | Val | Ala | Val | Val | Ala |  |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |  |
| Gly | Val | Thr | Ser | Glu | Pro | Pro | Gly | Pro | Glu | Gln | Arg | Val | Gly | Arg | Arg |  |
|     |     |     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |  |
| Ala | Ala | Glu | Val | Pro | Gly | Pro | Glu | Pro | Ser | Gln | Gln | Glu | Gln | Val | Ala |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |  |
| Phe | Gly | Ser | Gly | Asp | Thr | Val | Glu | Leu | Ser | Cys | His | Pro | Pro | Gly | Gly |  |
|     |     |     |     |     | 50  |     | 55  |     |     |     | 60  |     |     |     |     |  |
| Ala | Pro | Thr | Gly | Pro | Thr | Leu | Trp | Ala | Lys | Asp | Gly | Val | Gly | Leu | Val |  |
|     | 65  |     |     |     |     | 70  |     |     | 75  |     |     |     | 80  |     |     |  |
| Ala | Ser | His | Arg | Ile | Leu | Val | Gly | Pro | Gln | Arg | Leu | Gln | Val | Leu | Asn |  |
|     |     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |     |     |  |
| Ala | Thr | His | Glu | Asp | Ala | Gly | Val | Tyr | Ser | Cys | Gln | Gln | Arg | Leu | Thr |  |
|     |     |     |     |     | 100 |     |     | 105 |     |     |     | 110 |     |     |     |  |
| Arg | Arg | Val | Leu | Cys | His | Phe | Ser | Val | Arg | Val | Thr | Asp | Ala | Pro | Ser |  |
|     |     |     |     |     | 115 |     |     | 120 |     |     | 125 |     |     |     |     |  |
| Ser | Gly | Asp | Asp | Glu | Asp | Gly | Glu | Asp | Val | Ala | Glu | Asp | Thr | Gly | Ala |  |
|     |     |     |     |     | 130 |     | 135 |     |     |     | 140 |     |     |     |     |  |
| Pro | Tyr | Trp | Thr | Arg | Pro | Glu | Arg | Met | Asp | Lys | Lys | Leu | Leu | Ala | Val |  |
|     | 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     | 160 |     |  |
| Pro | Ala | Ala | Asn | Thr | Val | Arg | Phe | Arg | Cys | Pro | Ala | Ala | Gly | Asn | Pro |  |
|     |     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |     |     |  |
| Thr | Pro | Ser | Ile | Pro | Trp | Leu | Lys | Asn | Gly | Lys | Glu | Phe | Arg | Gly | Glu |  |
|     |     |     |     |     | 180 |     |     | 185 |     |     | 190 |     |     |     |     |  |
| His | Arg | Ile | Gly | Gly | Ile | Lys | Leu | Arg | His | Gln | Gln | Trp | Ser | Leu | Val |  |
|     |     |     |     |     | 195 |     |     | 200 |     |     | 205 |     |     |     |     |  |
| Met | Glu | Ser | Val | Val | Pro | Ser | Asp | Arg | Gly | Asn | Tyr | Thr | Cys | Val | Val |  |
|     | 210 |     |     |     |     | 215 |     |     |     | 220 |     |     |     |     |     |  |
| Glu | Asn | Lys | Phe | Gly | Ser | Ile | Arg | Gln | Thr | Tyr | Thr | Leu | Asp | Val | Leu |  |
|     | 225 |     |     |     |     | 230 |     |     |     | 235 |     |     |     | 240 |     |  |
| Glu | Arg | Ser | Pro | His | Arg | Pro | Ile | Leu | Gln | Ala | Gly | Leu | Pro | Ala | Asn |  |
|     |     |     |     |     | 245 |     |     | 250 |     |     | 255 |     |     |     |     |  |
| Gln | Thr | Ala | Val | Leu | Gly | Ser | Asp | Val | Glu | Phe | His | Cys | Lys | Val | Tyr |  |
|     |     |     |     |     | 260 |     |     | 265 |     |     | 270 |     |     |     |     |  |

Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn  
 275 280 285  
 Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys  
 290 295 300  
 Thr Ala Gly Ala Asn Thr Thr Asp Arg Glu Leu Glu Val Leu Ser Leu  
 305 310 315 320  
 His Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly  
 325 330 335  
 Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Val Val Leu Pro  
 340 345 350  
 Ala Glu Glu Glu Leu Met Glu Val Asp Glu Ala Gly Ser Val Tyr Ala  
 355 360 365  
 Gly Val Leu Ser Tyr Gly Val Gly Phe Phe Leu Phe Ile Leu Val Val  
 370 375 380  
 Ala Ala Val Thr Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu  
 385 390 395 400  
 Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln  
 405 410 415  
 Val Ser Leu Glu Ser Asn Ser Met Asn Ser Asn Thr Pro Leu Val  
 420 425 430  
 Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val  
 435 440 445  
 Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr  
 450 455 460  
 Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val  
 465 470 475 480  
 Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro  
 485 490 495  
 Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp  
 500 505 510  
 Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys  
 515 520 525  
 His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly Gly Pro  
 530 535 540  
 Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg Glu Phe  
 545 550 555 560  
 Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys  
 565 570 575  
 Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser Cys Ala  
 580 585 590  
 Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile  
 595 600 605  
 His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val  
 610 615 620  
 Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Leu Asp  
 625 630 635 640  
 Tyr Tyr Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala  
 645 650 655  
 Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp  
 660 665 670  
 Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro  
 675 680 685  
 Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly  
 690 695 700  
 His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr Met Ile  
 705 710 715 720  
 Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys  
 725 730 735  
 Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser Thr Asp  
 740 745 750  
 Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Gly Gly  
 755 760 765  
 Gln Asp Thr Pro Ser Ser Ser Ser Gly Asp Asp Ser Val Phe Thr  
 770 775 780

His Asp Leu Leu Pro Pro Gly Pro Pro Ser Asn Gly Gly Pro Arg Thr  
 785 790 795 800

&lt;210&gt; 19

&lt;211&gt; 2421

&lt;212&gt; DNA

&lt;213&gt; Gallus gallus

&lt;400&gt; 19

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| atgcgggccc  | cctggggctc  | cgtctggtgc  | ctgtgcctgg  | cggcgccgt   | cggagcgctg  | 60   |
| ccggccggcgc | gccggcgccgg | agcggagcgg  | agcggcgccgc | aggcggcaga  | atacttgagg  | 120  |
| agcgagaccg  | cctttctgga  | agagttggtg  | tttggaaatgt | gagataccat  | tgaactttcc  | 180  |
| tgtacacacc  | agagctcttc  | tgtgtcagt   | ttctggttta  | aagatggtat  | tgggatgtca  | 240  |
| ccttccaaca  | gaactcatat  | tggacaaaaa  | ctgttgaaga  | taatcaatgt  | gtcatatgac  | 300  |
| gattccgggc  | tgtacagttt  | caagccaagg  | cattccaaacg | aggtcctggg  | aaactttaca  | 360  |
| gtcagagtga  | cagatcccc   | ttcgtcaggt  | gatgtatggag | atgtatgcga  | tgagtcaagag | 420  |
| gatacagggt  | tccccttctg  | gaccggcca   | gataagatgg  | agaagaagact | gttggcagtt  | 480  |
| cctgcccca   | acaccgttc   | cttccgatgt  | ccagcagggt  | gaaacccaac  | tcccaccatt  | 540  |
| tactggctga  | agaatggcaa  | agaattcaag  | ggagagcaca  | ggatcggggg  | catcaagttt  | 600  |
| cgacaccagc  | agtggagctt  | ggtgtatggag | agcgttgc    | cgtcagatcg  | aggaaactac  | 660  |
| acctgtgttg  | tggagaacaa  | atatggcaat  | attaggcaca  | cataccagct  | tgtatgtttt  | 720  |
| gaacggtcac  | cccaccgacc  | aatctgcaa   | gcaggactcc  | ctgccaatca  | gactgtggtg  | 780  |
| gtcgggagca  | atgttgaatt  | tcactgcaag  | gtctacagcg  | atgcccagcc  | tcatatccag  | 840  |
| tggctgaaac  | acgtagaagt  | caacggcgc   | aagtatggac  | ctgatgggac  | accctatgtc  | 900  |
| acagtgtctga | agacggcagg  | tgttaacaca  | acggataagg  | agcttagagat | tctgtacttg  | 960  |
| cggaaatgtta | cttttgagga  | tgctgggaa   | tatacttgc   | tcgcaggaaa  | ttcttattggg | 1020 |
| ttctcacatc  | actctgtctt  | gctgacggtg  | ctaccagcag  | aggagctgtat | ggaaatggat  | 1080 |
| gattccggct  | cagtgtacgc  | tggcattctc  | agctatggca  | ctggcttagt  | cctcttcatc  | 1140 |
| ctgggtctgg  | tcattgttat  | tatctgcagg  | atgaaaatgc  | caaacaaaaa  | ggccatgaac  | 1200 |
| accaccactg  | tacagaaaat  | ctccaaattt  | ccactcaaga  | gacagcagggt | gtcggtggag  | 1260 |
| tccaaacttt  | ccatgaattc  | caacacaccc  | ctggcccgaa  | tcactcgtct  | tcctccagc   | 1320 |
| gatggggccga | tgctggccaa  | cgtctctgag  | ctggaaacttc | ctccagatcc  | caagtgggaa  | 1380 |
| ttggcacgtt  | ctcgccctgac | cctggggaaag | ccgcttgggt  | agggtgttt   | tggccaagtg  | 1440 |
| gtatggcgg   | aagaatggg   | gattgataaa  | gacaaggccaa | acaaggccat  | caccgtggct  | 1500 |
| gtcaagatgt  | taaaaatggat | tgccacagac  | aaggacccctt | cagaccttgtt | ctctgagatg  | 1560 |
| gaaatgatga  | aaatgatgg   | gaagcacaaa  | aacatcatta  | acctgctcg   | tgcttgacg   | 1620 |
| caggacggac  | cgctctacgt  | gttggttgaa  | tatgcatcg   | aggggaaactt | gcgggaatac  | 1680 |
| ctcaggccac  | gtcgcccacc  | tggcatggac  | tattccttcg  | acacctgcaa  | gctgcccgg   | 1740 |
| gagcgttga   | catttaaaa   | cctggtttcc  | tgcccttacc  | agggtggcccg | gggcattggag | 1800 |
| tactttgcgt  | cacagaaaat  | cattcatcg   | gacttggcag  | ccaggaatgt  | gttagtact   | 1860 |
| gaggacaatg  | tgtgaaaat   | agctgatttt  | ggcccttcta  | gagacgttca  | caacatcgac  | 1920 |
| tattacaaga  | aaaccaccaa  | tggtcggctg  | cctgtgaaat  | ggatggctcc  | agaagcattg  | 1980 |
| tttgaccggg  | tctataactca | ccagagcgat  | gtctggcttt  | ttggagtgct  | actatgggag  | 2040 |
| atcttcactt  | ttggagggtc  | tccgttcccg  | ggaattcctg  | ttgaagaact  | cttcaaactc  | 2100 |
| ttgaaagaag  | gccatcgat   | ggataaacc   | gccaactgt   | cccacgac    | gtacatgatc  | 2160 |
| atgcgggagt  | gctggcacgc  | tgtccccctc  | cagcgacca   | cattcaagca  | gctgggtggaa | 2220 |
| gacctggaca  | gagtccctac  | catgacatcc  | actgtatgat  | acctggac    | ctcggtgccc  | 2280 |
| tttgagcaat  | actcacccgc  | tggccaggac  | acccacagca  | cctgctcctc  | aggggacgac  | 2340 |
| tcggtttttg  | cacatgact   | gctgcctgtat | gagccctgccc | tgcccaagca  | cgtgcccctgt | 2400 |
| aatggcgtca  | tccgcacgt   | a           |             |             |             | 2421 |

&lt;210&gt; 20

&lt;211&gt; 806

&lt;212&gt; PRT

&lt;213&gt; Gallus gallus

&lt;400&gt; 20

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ala | Ala | Trp | Gly | Ser | Val | Trp | Cys | Leu | Cys | Leu | Ala | Ala | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Val | Gly | Ala | Leu | Pro | Ala | Ala | Arg | Arg | Arg | Gly | Ala | Glu | Arg | Ser | Gly |
|     |     |     |     | 20  |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Gly | Gln | Ala | Ala | Glu | Tyr | Leu | Arg | Ser | Glu | Thr | Ala | Phe | Leu | Glu | Glu |
|     |     |     |     | 35  |     |     | 40  |     |     |     |     | 45  |     |     |     |

Leu Val Phe Gly Ser Gly Asp Thr Ile Glu Leu Ser Cys Asn Thr Gln  
 50 55 60  
 Ser Ser Ser Val Ser Val Phe Trp Phe Lys Asp Gly Ile Gly Ile Ala  
 65 70 75 80  
 Pro Ser Asn Arg Thr His Ile Gly Gln Lys Leu Leu Lys Ile Ile Asn  
 85 90 95  
 Val Ser Tyr Asp Asp Ser Gly Leu Tyr Ser Cys Lys Pro Arg His Ser  
 100 105 110  
 Asn Glu Val Leu Gly Asn Phe Thr Val Arg Val Thr Asp Ser Pro Ser  
 115 120 125  
 Ser Gly Asp Asp Glu Asp Asp Asp Glu Ser Glu Asp Thr Gly Val  
 130 135 140  
 Pro Phe Trp Thr Arg Pro Asp Lys Met Glu Lys Lys Leu Leu Ala Val  
 145 150 155 160  
 Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Gly Gly Asn Pro  
 165 170 175  
 Thr Pro Thr Ile Tyr Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu  
 180 185 190  
 His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val  
 195 200 205  
 Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val  
 210 215 220  
 Glu Asn Lys Tyr Gly Asn Ile Arg His Thr Tyr Gln Leu Asp Val Leu  
 225 230 235 240  
 Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn  
 245 250 255  
 Gln Thr Val Val Val Gly Ser Asn Val Glu Phe His Cys Lys Val Tyr  
 260 265 270  
 Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn  
 275 280 285  
 Gly Ser Lys Tyr Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys  
 290 295 300  
 Thr Ala Gly Val Asn Thr Thr Asp Lys Glu Leu Glu Ile Leu Tyr Leu  
 305 310 315 320  
 Arg Asn Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly  
 325 330 335  
 Asn Ser Ile Gly Phe Ser His His Ser Ala Trp Leu Thr Val Leu Pro  
 340 345 350  
 Ala Glu Glu Leu Met Glu Met Asp Asp Ser Gly Ser Val Tyr Ala Gly  
 355 360 365  
 Ile Leu Ser Tyr Gly Thr Gly Leu Val Leu Phe Ile Leu Val Leu Val  
 370 375 380  
 Ile Val Ile Ile Cys Arg Met Lys Met Pro Asn Lys Lys Ala Met Asn  
 385 390 395 400  
 Thr Thr Thr Val Gln Lys Val Ser Lys Phe Pro Leu Lys Arg Gln Gln  
 405 410 415  
 Val Ser Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val  
 420 425 430  
 Arg Ile Thr Arg Leu Ser Ser Ser Asp Gly Pro Met Leu Ala Asn Val  
 435 440 445  
 Ser Glu Leu Glu Leu Pro Pro Asp Pro Lys Trp Glu Leu Ala Arg Ser  
 450 455 460  
 Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val  
 465 470 475 480  
 Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Lys Pro Asn Lys Ala  
 485 490 495  
 Ile Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp  
 500 505 510  
 Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys  
 515 520 525  
 His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro  
 530 535 540  
 Leu Tyr Val Leu Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr  
 545 550 555 560

Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Thr Cys  
 565 570 575  
 Lys Leu Pro Glu Glu Gln Leu Thr Phe Lys Asp Leu Val Ser Cys Ala  
 580 585 590  
 Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile  
 595 600 605  
 His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp Asn Val  
 610 615 620  
 Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn Ile Asp  
 625 630 635 640  
 Tyr Tyr Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala  
 645 650 655  
 Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp  
 660 665 670  
 Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro  
 675 680 685  
 Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly  
 690 695 700  
 His Arg Met Asp Lys Pro Ala Asn Cys Thr His Asp Leu Tyr Met Ile  
 705 710 715 720  
 Met Arg Glu Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys  
 725 730 735  
 Gln Leu Val Glu Asp Leu Asp Arg Val Leu Thr Met Thr Ser Thr Asp  
 740 745 750  
 Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro Ala Gly  
 755 760 765  
 Gln Asp Thr His Ser Thr Cys Ser Ser Gly Asp Asp Ser Val Phe Ala  
 770 775 780  
 His Asp Leu Leu Pro Asp Glu Pro Cys Leu Pro Lys His Val Pro Cys  
 785 790 795 800  
 Asn Gly Val Ile Arg Thr  
 805

&lt;210&gt; 21

&lt;211&gt; 2484

&lt;212&gt; DNA

&lt;213&gt; Xenopus laevis

&lt;400&gt; 21

atgtctaagg ctggaggggg ctgttgaatt gcccattatc aagggatcca tatggaaatt 60  
 gtcaccctgt tctgcactct ctgtttttt ctggtctctg tgaactgtgt cccggctgcc 120  
 cgactgcccag ttacgctccc tggagaggac agagcaaaaca gaaaagcatc agattatctc 180  
 acggtagaac agccccccatt cgatgagctc atgtttacaa ttggagaaac cattgagttg 240  
 tcctgctctg cggatgtatgc atccacgacc accaagtgtt tcaaggatgg tatacgccatt 300  
 gtgccgaaca acagaacaag tacgagggcag ggcctgctga agattatcaa catctcatac 360  
 gatgactctg ggatatacag ttgcagacta tggcattcta ctgaaattct ggcataatttt 420  
 accatcagag taacagactt accatcgatcc ggtgatgtatg aggatgacga tgatgaaacc 480  
 gaagacagag agcctccctcg ctggacccaa cctgagaaga tggagaagaa acttattgca 540  
 gtcctgccc ctaacacaat ccgattccgg tgcccagccg cggggaatcc cacccttacc 600  
 atccattggc ttaagaacgg aaagaattc aggggagagc atcttattgg tggcatcaaa 660  
 ctccgacatc agcagtggag cctcgatgt gagagcgtat ttcacatcgga taaaggcaac 720  
 tacacgtgt tagtggagaa caaatatggc agcatccgtc aaacatctatca acttgatgtc 780  
 ctggagaggt cctctcaccg gcccacatctt caggccgggt taccggccaa ccagacggtg 840  
 gtgttggga gcgacgtgga attccactgc aaagtctaca gtgacgcaca gccacatatt 900  
 cagtggctt aacacgtgga agtgaatggc agcaagtacg gcccagacgg agatccctac 960  
 gtcacagtgc tgcaatctt caccaatggc actgaagtgc atttacatctt aagtctaaaa 1020  
 aatgtgaccg agacccatga aggacatgt gtgtgttagag ccaacaattt cataggagta 1080  
 gcccaggcat cttttggct ccacatcttcc aaaccagcac cagcagaacc agtggagaag 1140  
 ccagcaacca catcttccag ctccatcacc gttcttattt ggtcacatctc gactattgt 1200  
 ttcatactgt tggtatcat tgtcatcacc taccgcatga aggtcccttc taagaaggca 1260  
 atgagcaccc cgccgggtgca taaagtctcc aagttcccg tcaagcggca ggtgtctcta 1320  
 gagtccaact cttctatgaa ttccaaacacc ccgctggta ggatcactca cctgtctcc 1380  
 agcgacggaa ccatgttggc taatgtgtcg gagctcgcc tgccccctgga tcccaagtgg 1440

gagttattga gatcaaggct gactttagga aagcccccgt gagaaggctg ctttggtcaa 1500  
 gtagtgatgg cagaagcaat tggcattgtat aaggaaaggc caaataagcc tgtaactgtat 1560  
 gctgtaaaga tgcttaaaga tgatgtacat gataaagatc tctccgatct ggtctcgag 1620  
 atggagatga tgaaaatgtat tggaagcac aaaaatatca tcaatctgtct aggagcatgc 1680  
 actcaggatg gaccactgtat cgttcttgcgtat gaatatgtat ccaagggaa cctcaggag 1740  
 tatttaaagg cacggcgcccccccaggaatg gattattttt ttgacacctgtat caaaaattcca 1800  
 gctgagcagc tgacgttcaa ggacccgtt tcttgcgcctt accaggtatc tcgtggcatg 1860  
 gagtacctgg cgtcgcaaaa atgtattcac agagatctgg cagccagaaa tgtgttagta 1920  
 acagatgaca ttgtaatgaa gattgcagat ttcggcttgcgtat ccagggacat ccacaacata 1980  
 gattattaca agaaaacaac aaatggtcgg ctgccagtca aatggatggc tccggaaagct 2040  
 ttgttcgacc gtatctcacat tcacatcagagc gatgtatgtt cgtacggagt gctgctgtgg 2100  
 gagatattta cactgggggg ctcgcctac ccagggatcc cagtagagga actctttaaag 2160  
 ctattgaaag aaggccacag aatggacaag ccagcaact gcacacatgtatcactgtat 2220  
 atcatgagag agtgcgtggca cgctgtccca tcgcaaaagac caaccccttcaa gcagctgggt 2280  
 gaagaccttg accgcgttct tactgtaaca tctactgtatcgtacccatgaa cctgtcggtat 2340  
 ccattcgagc agtattcccccc ggcgggccaa gacagtaaca gcacctgtctc ctcgggggac 2400  
 gactcagtct ttgctcatgatcattttaccc gatgaaccgt gtcttcccaa acaacagcag 2460  
 tacaacggcgccatccgaac atga 2484

&lt;210&gt; 22

&lt;211&gt; 827

&lt;212&gt; PRT

&lt;213&gt; Xenopus laevis

&lt;400&gt; 22

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Lys | Ala | Gly | Gly | Gly | Cys | Gly | Ile | Ala | Leu | Tyr | Gln | Gly | Ile |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     | 15  |     |     |
| His | Met | Gly | Ile | Val | Thr | Leu | Phe | Cys | Thr | Leu | Cys | Phe | Phe | Leu | Val |
|     | 20  |     |     |     |     | 25  |     |     |     |     |     |     | 30  |     |     |
| Ser | Val | Asn | Cys | Val | Pro | Ala | Ala | Arg | Leu | Pro | Val | Thr | Leu | Pro | Gly |
|     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Glu | Asp | Arg | Ala | Asn | Arg | Lys | Ala | Ser | Asp | Tyr | Leu | Thr | Val | Glu | Gln |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Pro | Phe | Asp | Glu | Leu | Met | Phe | Thr | Ile | Gly | Glu | Thr | Ile | Glu | Leu |
|     | 65  |     |     |     |     | 70  |     |     |     | 75  |     | 80  |     |     |     |
| Ser | Cys | Ser | Ala | Asp | Asp | Ala | Ser | Thr | Thr | Thr | Lys | Trp | Phe | Lys | Asp |
|     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |     |     |
| Gly | Ile | Gly | Ile | Val | Pro | Asn | Asn | Arg | Thr | Ser | Thr | Arg | Gln | Gly | Leu |
|     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |     |
| Leu | Lys | Ile | Ile | Asn | Ile | Ser | Tyr | Asp | Asp | Ser | Gly | Ile | Tyr | Ser | Cys |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Arg | Leu | Trp | His | Ser | Thr | Glu | Ile | Leu | Arg | Asn | Phe | Thr | Ile | Arg | Val |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Asp | Leu | Pro | Ser | Ser | Gly | Asp | Asp | Glu | Asp | Asp | Asp | Asp | Glu | Thr |
|     | 145 |     |     |     |     | 150 |     |     |     | 155 |     |     | 160 |     |     |
| Glu | Asp | Arg | Glu | Pro | Pro | Arg | Trp | Thr | Gln | Pro | Glu | Lys | Met | Glu | Lys |
|     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     |
| Lys | Leu | Ile | Ala | Val | Pro | Ala | Ala | Asn | Thr | Ile | Arg | Phe | Arg | Cys | Pro |
|     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     |
| Ala | Ala | Gly | Asn | Pro | Thr | Pro | Thr | Ile | His | Trp | Leu | Lys | Asn | Gly | Lys |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Glu | Phe | Arg | Gly | Glu | His | Arg | Ile | Gly | Gly | Ile | Lys | Leu | Arg | His | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gln | Trp | Ser | Leu | Val | Met | Glu | Ser | Val | Val | Pro | Ser | Asp | Lys | Gly | Asn |
|     | 225 |     |     |     |     | 230 |     |     |     | 235 |     |     | 240 |     |     |
| Tyr | Thr | Cys | Val | Val | Glu | Asn | Lys | Tyr | Gly | Ser | Ile | Arg | Gln | Thr | Tyr |
|     | 245 |     |     |     |     | 250 |     |     |     | 255 |     |     |     |     |     |
| Gln | Leu | Asp | Val | Leu | Glu | Arg | Ser | Ser | His | Arg | Pro | Ile | Leu | Gln | Ala |
|     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |     |
| Gly | Leu | Pro | Ala | Asn | Gln | Thr | Val | Val | Phe | Gly | Ser | Asp | Val | Glu | Phe |
|     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |
| His | Cys | Lys | Val | Tyr | Ser | Asp | Ala | Gln | Pro | His | Ile | Gln | Trp | Leu | Lys |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| His | Val | Glu | Val | Asn | Gly | Ser | Lys | Tyr | Gly | Pro | Asp | Gly | Asp | Pro | Tyr |

27

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     | 310 |     | 315 |     | 320 |     |     |     |     |     |     |     |     |     |
| Val | Thr | Val | Leu | Gln | Ser | Phe | Thr | Asn | Gly | Thr | Glu | Val | Asp | Ser | Thr |
|     |     |     |     | 325 |     | 330 |     |     |     | 335 |     |     |     |     |     |
| Leu | Ser | Leu | Lys | Asn | Val | Thr | Glu | Thr | His | Glu | Gly | Gln | Tyr | Val | Cys |
|     |     |     | 340 |     |     | 345 |     |     | 350 |     |     |     |     |     |     |
| Arg | Ala | Asn | Asn | Phe | Ile | Gly | Val | Ala | Glu | Ala | Ser | Phe | Trp | Leu | His |
|     |     |     | 355 |     |     | 360 |     |     | 365 |     |     |     |     |     |     |
| Ile | Tyr | Lys | Pro | Ala | Pro | Ala | Glu | Pro | Val | Glu | Lys | Pro | Ala | Thr | Thr |
|     | 370 |     |     | 375 |     |     | 380 |     |     |     |     |     |     |     |     |
| Ser | Ser | Ser | Ile | Thr | Val | Leu | Ile | Val | Val | Thr | Ser | Thr | Ile | Val |     |
|     | 385 |     |     | 390 |     |     | 395 |     |     | 400 |     |     |     |     |     |
| Phe | Ile | Leu | Leu | Val | Ile | Ile | Val | Ile | Thr | Tyr | Arg | Met | Lys | Val | Pro |
|     |     |     |     |     |     |     |     |     | 405 | 410 |     | 415 |     |     |     |
| Ser | Lys | Lys | Ala | Met | Ser | Thr | Pro | Pro | Val | His | Lys | Val | Ser | Lys | Phe |
|     |     |     | 420 |     |     |     | 425 |     |     | 430 |     |     |     |     |     |
| Pro | Leu | Lys | Arg | Gln | Val | Ser | Leu | Glu | Ser | Asn | Ser | Ser | Met | Asn | Ser |
|     |     |     | 435 |     |     |     | 440 |     |     | 445 |     |     |     |     |     |
| Asn | Thr | Pro | Leu | Val | Arg | Ile | Thr | His | Leu | Ser | Ser | Ser | Asp | Gly | Thr |
|     |     |     | 450 |     |     | 455 |     |     | 460 |     |     |     |     |     |     |
| Met | Leu | Ala | Asn | Val | Ser | Glu | Leu | Gly | Leu | Pro | Leu | Asp | Pro | Lys | Trp |
|     | 465 |     |     |     |     | 470 |     |     | 475 |     |     | 480 |     |     |     |
| Glu | Leu | Leu | Arg | Ser | Arg | Leu | Thr | Leu | Gly | Lys | Pro | Leu | Gly | Glu | Gly |
|     |     |     |     |     |     | 485 |     |     | 490 |     |     | 495 |     |     |     |
| Cys | Phe | Gly | Gln | Val | Val | Met | Ala | Glu | Ala | Ile | Gly | Ile | Asp | Lys | Glu |
|     |     |     | 500 |     |     |     | 505 |     |     |     | 510 |     |     |     |     |
| Arg | Pro | Asn | Lys | Pro | Val | Thr | Val | Ala | Val | Lys | Met | Leu | Lys | Asp | Asp |
|     |     |     | 515 |     |     |     | 520 |     |     | 525 |     |     |     |     |     |
| Ala | Thr | Asp | Lys | Asp | Leu | Ser | Asp | Leu | Val | Ser | Glu | Met | Glu | Met | Met |
|     |     |     | 530 |     |     | 535 |     |     | 540 |     |     |     |     |     |     |
| Lys | Met | Ile | Gly | Lys | His | Lys | Asn | Ile | Ile | Asn | Leu | Leu | Gly | Ala | Cys |
|     | 545 |     |     |     | 550 |     |     |     | 555 |     |     | 560 |     |     |     |
| Thr | Gln | Asp | Gly | Pro | Leu | Tyr | Val | Leu | Val | Glu | Tyr | Ala | Ser | Lys | Gly |
|     |     |     |     |     | 565 |     |     | 570 |     |     | 575 |     |     |     |     |
| Asn | Leu | Arg | Glu | Tyr | Leu | Lys | Ala | Arg | Arg | Pro | Pro | Gly | Met | Asp | Tyr |
|     |     |     | 580 |     |     | 585 |     |     | 590 |     |     |     |     |     |     |
| Ser | Phe | Asp | Thr | Cys | Lys | Ile | Pro | Ala | Glu | Gln | Leu | Thr | Phe | Lys | Asp |
|     |     |     | 595 |     |     |     | 600 |     |     | 605 |     |     |     |     |     |
| Leu | Val | Ser | Cys | Ala | Tyr | Gln | Val | Ala | Arg | Gly | Met | Glu | Tyr | Leu | Ala |
|     | 610 |     |     |     | 615 |     |     | 620 |     |     |     |     |     |     |     |
| Ser | Gln | Lys | Cys | Ile | His | Arg | Asp | Leu | Ala | Ala | Arg | Asn | Val | Leu | Val |
|     | 625 |     |     |     | 630 |     |     |     | 635 |     |     | 640 |     |     |     |
| Thr | Asp | Asp | Ile | Val | Met | Lys | Ile | Ala | Asp | Phe | Gly | Leu | Ala | Arg | Asp |
|     |     |     |     |     | 645 |     |     | 650 |     |     | 655 |     |     |     |     |
| Ile | His | Asn | Ile | Asp | Tyr | Tyr | Lys | Thr | Thr | Asn | Gly | Arg | Leu | Pro |     |
|     |     |     | 660 |     |     | 665 |     |     | 670 |     |     |     |     |     |     |
| Val | Lys | Trp | Met | Ala | Pro | Glu | Ala | Leu | Phe | Asp | Arg | Ile | Tyr | Thr | His |
|     |     |     | 675 |     |     | 680 |     |     | 685 |     |     |     |     |     |     |
| Gln | Ser | Asp | Val | Trp | Ser | Tyr | Gly | Val | Leu | Leu | Trp | Glu | Ile | Phe | Thr |
|     |     |     | 690 |     |     | 695 |     |     | 700 |     |     |     |     |     |     |
| Leu | Gly | Gly | Ser | Pro | Tyr | Pro | Gly | Ile | Pro | Val | Glu | Glu | Leu | Phe | Lys |
|     | 705 |     |     |     | 710 |     |     |     | 715 |     |     | 720 |     |     |     |
| Leu | Leu | Lys | Glu | Gly | His | Arg | Met | Asp | Lys | Pro | Ala | Asn | Cys | Thr | His |
|     |     |     |     |     | 725 |     |     |     | 730 |     |     | 735 |     |     |     |
| Glu | Leu | Tyr | Met | Ile | Met | Arg | Glu | Cys | Trp | His | Ala | Val | Pro | Ser | Gln |
|     |     |     | 740 |     |     | 745 |     |     |     | 750 |     |     |     |     |     |
| Arg | Pro | Thr | Phe | Lys | Gln | Leu | Val | Glu | Asp | Leu | Asp | Arg | Val | Leu | Thr |
|     |     |     | 755 |     |     | 760 |     |     | 765 |     |     |     |     |     |     |
| Val | Thr | Ser | Thr | Asp | Glu | Tyr | Leu | Asp | Leu | Ser | Val | Pro | Phe | Glu | Gln |
|     |     |     | 770 |     |     | 775 |     |     | 780 |     |     |     |     |     |     |
| Tyr | Ser | Pro | Ala | Gly | Gln | Asp | Ser | Asn | Ser | Thr | Cys | Ser | Ser | Gly | Asp |
|     | 785 |     |     |     | 790 |     |     | 795 |     |     | 800 |     |     |     |     |
| Asp | Ser | Val | Phe | Ala | His | Asp | Ile | Leu | Pro | Asp | Glu | Pro | Cys | Leu | Pro |
|     |     |     |     |     | 805 |     |     | 810 |     |     | 815 |     |     |     |     |
| Lys | Gln | Gln | Gln | Tyr | Asn | Gly | Ala | Ile | Arg | Thr |     |     |     |     |     |

820

825

<210> 23  
<211> 2409

&lt;212&gt; DNA

&lt;213&gt; Xenopus laevis

<400> 23

|            |             |             |             |              |             |      |
|------------|-------------|-------------|-------------|--------------|-------------|------|
| atggctctgt | tgaatggtgt  | cccgctgcc   | cgactgcccag | ttacgctccc   | tggagaggac  | 60   |
| agagcgagca | aaaaagcacc  | agattatctc  | atggtagaac  | agccccatt    | cgatgaactc  | 120  |
| atgtatacaa | ttggagaaaac | cattgagttt  | tcctgcgtg   | cagaagatgc   | ttccacaact  | 180  |
| accaagtgtt | gtaaaggatgg | tattggcatt  | gtaccgaaca  | acagaacaag   | cacaaggcag  | 240  |
| ggcctgctga | agattatcaa  | cgtctccctcc | gatgactccg  | ggatatacacag | ctgcagacta  | 300  |
| tggcattcta | ccgagattct  | gcgcatttt   | acaatcagag  | taacagactt   | gccccatct   | 360  |
| ggtgacgtat | aggatgtat   | tgatgtat    | gatgtgaaa   | ccgaagacag   | agaacccct   | 420  |
| cgcgtgacc  | aacctgagag  | gtggaaaag   | aaacttattt  | cagtcctgc    | tgctaacaca  | 480  |
| atccgcttcc | ggtgcccagc  | cgcaggaaat  | cccaccccta  | ccatccactg   | gctaaagaac  | 540  |
| ggaaaggagt | tcagggggga  | acatcttatt  | gttggcatca  | aactccgaca   | tcaacagtgg  | 600  |
| agcctgtta  | tggagagttt  | ggtcccattca | gataaaaggca | actacacgtg   | tgtggggag   | 660  |
| aacaatatg  | gaagcatccg  | tcaaacctat  | caacttgtat  | tccttgagag   | gtcctctac   | 720  |
| cggccatcc  | ttcaggctgg  | gttacccggc  | aaccagacgg  | tttgcttgg    | gagcgtcg    | 780  |
| gaattccact | gcaaaagtcta | cagtgcgc    | caacctata   | ttcagtggct   | taaacacgtg  | 840  |
| gaagtgaatg | gcagcaata   | cggcccagac  | ggagatcctt  | acgtctcagt   | gttgcaatct  | 900  |
| ttcatcaatg | gcactgaagt  | cgattctacc  | ctaagtctaa  | aaaatgtgac   | cgagaccaat  | 960  |
| gaaggacagt | atgtgtgtat  | agccaaacaat | ttcataggag  | tagccgaggc   | atccctttgg  | 1020 |
| ctccacattt | acaaaccaggc | accaggagaa  | ccagtggaga  | aggcattgac   | aacatcttcc  | 1080 |
| agctctatca | ccgtccttat  | tgtgttcacc  | tcgaccattt  | tgttcatact   | gttggttatc  | 1140 |
| atcgcatca  | cccacccat   | gaaggtccct  | tccaagaagt  | caatgaccgc   | cccaccgg    | 1200 |
| cataaagtct | ccaagttccc  | cctcaaacgg  | cagcagggtt  | ctcttagagtc  | caactcttct  | 1260 |
| atgaattcca | acaccccggt  | ggtgaggatc  | actcatctgt  | cctccagcga   | tggaaccatg  | 1320 |
| ctggctaatt | tgtcggaaact | tggctgcca   | tttgaccctt  | agtggggattt  | attgagatca  | 1380 |
| aggctgactt | tagaaagcc   | cctcggggaa  | ggctgctcg   | gtcagggttgt  | gatggcagaa  | 1440 |
| gctattggca | ttgataagga  | aaggccaaat  | aagcctgtca  | ctgtagctgt   | aaagatgctt  | 1500 |
| aaagacgtt  | ccacagat    | agatctca    | gatctgggtt  | ctgagatgg    | gatgtgaaa   | 1560 |
| atgatggaa  | agcataaaaa  | tatcatcaat  | ctgtggggag  | catgcactca   | ggatggccg   | 1620 |
| ctgtacgtt  | tggtggaaa   | cgcacgtaaa  | gggagccctt  | ggggatattt   | aaaggcaccg  | 1680 |
| cgcacccctt | gaatggatta  | ttctttgtat  | gcctgcaaaa  | ttccagctga   | gcagctgacg  | 1740 |
| ttcaaggacc | tagttcttg   | tgccttaccag | gtagctcg    | gcatgggat    | cctggcatca  | 1800 |
| caaaaatgca | ttcacagaga  | tctggcagcc  | agaaatgtgt  | tagtaacaga   | tgacaacgt   | 1860 |
| atgaagattt | cagatttccg  | tttgccagg   | gacatccaca  | acatagat     | ttacaagaaa  | 1920 |
| acaacaaatg | gtcggctgcc  | tgtgaaatgg  | atggctccgg  | aagctttgtt   | tgaccgtatc  | 1980 |
| tacactcatc | acagcgtat   | atggctgtac  | ggagtgtc    | tgtgggagat   | atttacactg  | 2040 |
| gggggctcac | cctacccagg  | gatccggta   | gaggaactt   | ttaagctatt   | gaaagaaggc  | 2100 |
| cacagaatgg | acaagccagc  | aaactgcaca  | catgaactgt  | atatgtat     | gagagagtgc  | 2160 |
| tggcacgtt  | ccccctcaca  | aagacccggc  | ttcaagcagc  | tgggtgaaga   | ccttgaccgc  | 2220 |
| gttcttactt | taacatctac  | taatgagttac | ctagacctt   | cggttagcatt  | cgagcgtat   | 2280 |
| tctccaccca | gccaagacag  | tcacagcacc  | tgctcctcag  | gggacgactc   | agtcttgct   | 2340 |
| cacgacattt | tacccgtat   | accgtgtctt  | cccaaacacc  | agcagcaca    | cggcgcacatc | 2400 |
| ccccatgt   |             |             |             |              |             | 2409 |

<210> 24  
<211> 802

&lt;212&gt; PRT

&lt;213&gt; Xenopus laevis

<400> 24

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Ser | Val | Asn | Gly | Val | Pro | Ala | Ala | Arg | Leu | Pro | Val | Thr | Leu |
| 1   |     |     |     | 5   |     |     | 10  |     |     | 15  |     |     |     |     |     |
| Pro | Gly | Glu | Asp | Arg | Ala | Ser | Arg | Lys | Ala | Pro | Asp | Tyr | Leu | Met | Val |
|     | 20  |     |     |     | 25  |     |     | 30  |     |     |     |     |     |     |     |
| Glu | Gln | Pro | Pro | Phe | Asp | Glu | Leu | Met | Tyr | Thr | Ile | Gly | Glu | Thr | Ile |
|     | 35  |     |     |     | 40  |     |     | 45  |     |     |     |     |     |     |     |
| Glu | Leu | Ser | Cys | Ala | Ala | Glu | Asp | Ala | Ser | Thr | Thr | Lys | Trp | Cys |     |

|   |     |     |
|---|-----|-----|
| 50  | 55  | 60  |
| Lys Asp Gly Ile Gly Ile Val Pro Asn Asn Arg Thr Ser Thr Arg Gln |     |     |
| 65  | 70  | 75  |
| Gly Leu Leu Lys Ile Ile Asn Val Ser Ser Asp Asp Ser Gly Ile Tyr |     | 80  |
| 85  | 90  | 95  |
| Ser Cys Arg Leu Trp His Ser Thr Glu Ile Leu Arg Asn Phe Thr Ile |     |     |
| 100   | 105 | 110 |
| Arg Val Thr Asp Leu Pro Ser Ser Gly Asp Asp Glu Asp Asp Asp Asp |     |     |
| 115   | 120 | 125 |
| Asp Asp Asp Asp Glu Thr Glu Asp Arg Glu Pro Pro Arg Trp Thr Gln |     |     |
| 130   | 135 | 140 |
| Pro Glu Arg Met Glu Lys Lys Leu Ile Ala Val Pro Ala Ala Asn Thr |     |     |
| 145   | 150 | 155 |
| Ile Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile His |     | 160 |
| 165   | 170 | 175 |
| Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu His Arg Ile Gly Gly |     |     |
| 180   | 185 | 190 |
| Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu Ser Val Val |     |     |
| 195   | 200 | 205 |
| Pro Ser Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Lys Tyr Gly |     |     |
| 210   | 215 | 220 |
| Ser Ile Arg Gln Thr Tyr Gln Leu Asp Val Leu Glu Arg Ser Ser His |     |     |
| 225   | 230 | 235 |
| Arg Pro Ile Leu Gln Ala Gly Leu Pro Gly Asn Gln Thr Val Val Leu |     |     |
| 245   | 250 | 255 |
| Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro |     |     |
| 260   | 265 | 270 |
| His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser Lys Tyr Gly |     |     |
| 275   | 280 | 285 |
| Pro Asp Gly Asp Pro Tyr Val Ser Val Leu Gln Ser Phe Ile Asn Gly |     |     |
| 290   | 295 | 300 |
| Thr Glu Val Asp Ser Thr Leu Ser Leu Lys Asn Val Thr Glu Thr Asn |     |     |
| 305   | 310 | 315 |
| Glu Gly Gln Tyr Val Cys Arg Ala Asn Asn Phe Ile Gly Val Ala Glu |     |     |
| 325   | 330 | 335 |
| Ala Ser Phe Trp Leu His Ile Tyr Lys Pro Ala Pro Ala Glu Pro Val |     |     |
| 340   | 345 | 350 |
| Glu Lys Ala Leu Thr Thr Ser Ser Ser Ile Thr Val Leu Ile Val     |     |     |
| 355   | 360 | 365 |
| Val Thr Ser Thr Ile Val Phe Ile Leu Leu Val Ile Ile Val Ile Thr |     |     |
| 370   | 375 | 380 |
| His Leu Met Lys Val Pro Ser Lys Lys Ser Met Thr Ala Pro Pro Val |     |     |
| 385   | 390 | 395 |
| His Lys Val Ser Lys Phe Pro Leu Lys Arg Gln Gln Val Ser Leu Glu |     |     |
| 405   | 410 | 415 |
| Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr His |     |     |
| 420   | 425 | 430 |
| Leu Ser Ser Ser Asp Gly Thr Met Leu Ala Asn Val Ser Glu Leu Gly |     |     |
| 435   | 440 | 445 |
| Leu Pro Leu Asp Pro Lys Trp Glu Leu Leu Arg Ser Arg Leu Thr Leu |     |     |
| 450   | 455 | 460 |
| Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu |     |     |
| 465   | 470 | 475 |
| Ala Ile Gly Ile Asp Lys Glu Arg Pro Asn Lys Pro Ala Thr Val Ala |     |     |
| 485   | 490 | 495 |
| Val Lys Met Leu Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu |     |     |
| 500   | 505 | 510 |
| Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile |     |     |
| 515   | 520 | 525 |
| Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu |     |     |
| 530   | 535 | 540 |
| Val Glu Tyr Ala Ser Lys Gly Ser Leu Arg Glu Tyr Leu Lys Ala Arg |     |     |
| 545   | 550 | 555 |
| Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp Ala Cys Lys Ile Pro Ala |     | 560 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gln | Leu | Thr | Phe | Lys | Asp | Leu | Val | Ser | Cys | Ala | Tyr | Gln | Val | Ala |
| 565 |     |     |     |     |     |     |     |     |     |     |     |     | 575 |     |     |
| 580 |     |     |     |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Arg | Gly | Met | Glu | Tyr | Leu | Ala | Ser | Gln | Lys | Cys | Ile | His | Arg | Asp | Leu |
| 595 |     |     |     |     |     |     |     | 600 |     |     |     |     | 605 |     |     |
| Ala | Ala | Arg | Asn | Val | Leu | Val | Thr | Asp | Asp | Asn | Val | Met | Lys | Ile | Ala |
| 610 |     |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |
| Asp | Phe | Gly | Leu | Ala | Arg | Asp | Ile | His | Asn | Ile | Asp | Tyr | Tyr | Lys |     |
| 625 |     |     |     |     |     |     | 630 |     |     |     | 635 |     |     | 640 |     |
| Thr | Thr | Asn | Gly | Arg | Leu | Pro | Val | Lys | Trp | Met | Ala | Pro | Glu | Ala | Leu |
|     |     |     |     |     |     |     |     | 645 |     | 650 |     |     | 655 |     |     |
| Phe | Asp | Arg | Ile | Tyr | Thr | His | His | Ser | Asp | Val | Trp | Ser | Tyr | Gly | Val |
|     |     |     |     |     |     |     | 660 |     | 665 |     |     | 670 |     |     |     |
| Leu | Leu | Trp | Glu | Ile | Phe | Thr | Leu | Gly | Gly | Ser | Pro | Tyr | Pro | Gly | Ile |
|     |     |     |     |     |     |     | 675 |     | 680 |     |     | 685 |     |     |     |
| Pro | Val | Glu | Glu | Leu | Phe | Lys | Leu | Leu | Lys | Glu | Gly | His | Arg | Met | Asp |
|     |     |     |     |     |     |     | 690 |     | 695 |     |     | 700 |     |     |     |
| Lys | Pro | Ala | Asn | Cys | Thr | His | Glu | Leu | Tyr | Met | Ile | Met | Arg | Glu | Cys |
|     |     |     |     |     |     |     | 705 |     | 710 |     |     | 715 |     |     | 720 |
| Trp | His | Ala | Val | Pro | Ser | Gln | Arg | Pro | Ala | Phe | Lys | Gln | Leu | Val | Glu |
|     |     |     |     |     |     |     | 725 |     | 730 |     |     | 735 |     |     |     |
| Asp | Leu | Asp | Arg | Val | Leu | Thr | Val | Thr | Ser | Thr | Asn | Glu | Tyr | Leu | Asp |
|     |     |     |     |     |     |     | 740 |     | 745 |     |     | 750 |     |     |     |
| Leu | Ser | Val | Ala | Phe | Glu | Gln | Tyr | Ser | Pro | Pro | Ser | Gln | Asp | Ser | His |
|     |     |     |     |     |     |     | 755 |     | 760 |     |     | 765 |     |     |     |
| Ser | Thr | Cys | Ser | Ser | Gly | Asp | Asp | Ser | Val | Phe | Ala | His | Asp | Ile | Leu |
|     |     |     |     |     |     |     | 770 |     | 775 |     |     | 780 |     |     |     |
| Pro | Asp | Glu | Pro | Cys | Leu | Pro | Lys | His | Gln | Gln | His | Asn | Gly | Ala | Ile |
|     |     |     |     |     |     |     | 785 |     | 790 |     |     | 795 |     |     | 800 |
| Pro | Thr |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 25

&lt;211&gt; 2391

&lt;212&gt; DNA

&lt;213&gt; Pleurodeles waltlii

&lt;400&gt; 25

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| atgctcgct   | ggctctgcgg  | tttgtgtctg  | gtgactctgg  | cgggcggacg  | ttcggccggcc | 60   |
| aggctcccc   | tcaccgaggg  | ccgaccacaca | gcagacttcc  | tgcggccggca | cgcctccctg  | 120  |
| gtggaaagagc | tcctgttccg  | cacgggggac  | accatcgagc  | tctcttgac   | caccccccggc | 180  |
| tcctctgtgt  | ccgtgggtgt  | gttcaaagac  | gggatctcgg  | tggacccacc  | aacctgttcc  | 240  |
| cacaccggcc  | agaagctgt   | gaagatcatc  | aacgtgttct  | acgacgactc  | gggagtgtac  | 300  |
| agctgcaagg  | cccggcagtc  | cagcgaggtg  | ctccggaaacg | tgaccgtcag  | gttgaccgat  | 360  |
| tctccgtcat  | ccgggtatga  | cgaagatgtat | gatgaggaat  | ctgaaagtgc  | aatgcacca   | 420  |
| aaattcacgc  | gaccggaaatg | gatggagaag  | aaactgttgc  | cagtggccgc  | agccaacacg  | 480  |
| gtgcgttcc   | gatgcccagc  | tgcaggaaag  | ccaacgcatt  | ccatcacttg  | gtgtaaaaac  | 540  |
| ggcaaggagt  | tcaaaggcga  | gcatcgatt   | gggggcataa  | agctaagaca  | ccagcagtgg  | 600  |
| agtttggta   | tggagagtgt  | agtcccatcc  | gatcggggaa  | attacacatg  | tgtggtgcc   | 660  |
| aacaagtacg  | gcaccatccg  | agagacctac  | acattggatg  | tccttgaacg  | aactccctac  | 720  |
| cggccatcc   | tccaggcggg  | attcgttcc   | aacaagactg  | tgggtttagg  | aagcgatgtg  | 780  |
| gagttccatt  | gcaagggtata | cagtgtatgc  | cagccgcaca  | tccagtggct  | gaaacacgtg  | 840  |
| gagggttaatg | gcagcaagtt  | tggacctgtat | gggaaccctgt | atgtcacagt  | gtttaagacg  | 900  |
| gcaggtgtta  | ataccctcgg  | taaggagcta  | gaaattcagt  | tcttgcgaaa  | tgttaacttt  | 960  |
| gaggatgtcg  | gggagatatac | ttgttctcgct | gggaactta   | ttggctattc  | ccatcattct  | 1020 |
| gcttgctca   | cggtgctgcc  | accaggcagag | ccggcccttca | acgtcgacac  | ctctgtcagc  | 1080 |
| attctgccc   | ctgcaggatg  | tgtcgatgtt  | tttatactgg  | tggtgatcat  | aatcttact   | 1140 |
| tacaagatga  | agatgccctc  | caagaagacc  | atgaacaccg  | ccactgtgca  | caaagtctca  | 1200 |
| aagttccctc  | tcaagagaca  | ggtgtcactg  | gagtccaaact | tttcaatgaa  | ttccaacacc  | 1260 |
| cctctggtgc  | gaatcaccgg  | cctgtcgcc   | agcgatggc   | cgatgctggc  | caacgtgtcc  | 1320 |
| gagctggagc  | tacccgctga  | tccgaagtgg  | gaattgtctc  | gttcacgctt  | gactttggc   | 1380 |
| aaacctcttgc | gggaaggatg  | cttggccag   | gtggtgatgg  | cgatgtcagt  | tggcattgaa  | 1440 |
| aaggataagc  | caaacaaggc  | caccccggtt  | gccgttaaga  | tgttggaaaga | tgtatgccc   | 1500 |

gataaaagacc tgcggatct agtctctgaa atggaaatgat tgaaaatgat tggaaagcac 1560  
 aaaaacatca ttaatctcct gggagcctgc acgcaggatg gcccactcta cgtgctggtg 1620  
 gaatatgcac ccaaaggaaa cttgcgggag tacctgaggg cccggcgccc tcctggcatg 1680  
 gattactcct tcgacacccg caaacttccc gaagagcagt tgaccttcaa ggacttggta 1740  
 tcctgtgcct accaggtgac ccgcggcatg gagtacctgg cctctcagaa gtgcatacac 1800  
 cgagatctgg cagccccgaa cgtgctggtg acggatgaca acgttatgaa gattgctgat 1860  
 tttggcctgg cgagagatgt gcacaacatc gactactaca agaaaactac aaatggccga 1920  
 ctgcccgtga agtggatgac tccggaggct ttgttcgacc gggtctacac tcaccaaagc 1980  
 gacgtctggt cgtttggagt gcttctgtgg gagatcttca cgctgggggg ctcggctac 2040  
 cctggaatcc cagtggaaactcttcaag ctgttaaagg aaggccatcg aatggacaaa 2100  
 ccagcgaact gcacgcatga gctgtacatg atcatgcggg agtgctggca tgcagtgcca 2160  
 tcccagccgc caaccttcaa gcaactcgta gaagacttgg accgggtcct tacggtgacc 2220  
 tccactgtg agtacctcgatctctgtg cccttcgagc agtattcgcc tgcctgccc 2280  
 gacagccaca gcagctgctc ttctggagac gattcggctt ttgcccacga cctgcccag 2340  
 gagccctgccc ttccgaagca ccagcagttaaatggagtaa tccgaacatcg a 2391

&lt;210&gt; 26

&lt;211&gt; 796

&lt;212&gt; PRT

&lt;213&gt; Pleurodeles waltlii

&lt;400&gt; 26

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Val | Trp | Leu | Cys | Gly | Leu | Cys | Leu | Val | Thr | Leu | Ala | Gly | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Arg | Ser | Ala | Ala | Arg | Leu | Pro | Leu | Thr | Glu | Gly | Arg | Pro | Thr | Ala | Asp |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Phe | Leu | Pro | Gly | Asp | Ala | Ser | Leu | Val | Glu | Glu | Leu | Leu | Phe | Gly | Thr |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |
| Gly | Asp | Thr | Ile | Glu | Leu | Ser | Cys | Thr | Thr | Pro | Gly | Ser | Ser | Val | Ser |
|     |     |     |     | 50  |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Val | Val | Trp | Phe | Lys | Asp | Gly | Ile | Ser | Val | Asp | Pro | Pro | Thr | Trp | Ser |
|     |     |     |     | 65  |     |     | 70  |     |     | 75  |     |     | 80  |     |     |
| His | Thr | Gln | Lys | Leu | Leu | Lys | Ile | Ile | Asn | Val | Ser | Tyr | Asp | Asp |     |
|     |     |     |     | 85  |     |     | 90  |     |     |     |     | 95  |     |     |     |
| Ser | Gly | Val | Tyr | Ser | Cys | Lys | Ala | Arg | Gln | Ser | Ser | Glu | Val | Leu | Arg |
|     |     |     |     | 100 |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Asn | Val | Thr | Val | Arg | Val | Thr | Asp | Ser | Pro | Ser | Ser | Gly | Asp | Asp | Glu |
|     |     |     |     | 115 |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asp | Asp | Asp | Glu | Glu | Ser | Glu | Ser | Ala | Asn | Ala | Pro | Lys | Phe | Thr | Arg |
|     |     |     | 130 |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Pro | Glu | Trp | Met | Glu | Lys | Lys | Leu | Leu | Ala | Val | Pro | Ala | Ala | Asn | Thr |
|     |     |     | 145 |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Val | Arg | Phe | Arg | Cys | Pro | Ala | Ala | Gly | Lys | Pro | Thr | Pro | Ser | Ile | Thr |
|     |     |     | 165 |     | 170 |     |     |     |     |     |     |     | 175 |     |     |
| Trp | Leu | Lys | Asn | Gly | Lys | Glu | Phe | Lys | Gly | Glu | His | Arg | Ile | Gly | Gly |
|     |     |     | 180 |     | 185 |     |     |     |     |     | 190 |     |     |     |     |
| Ile | Lys | Leu | Arg | His | Gln | Gln | Trp | Ser | Leu | Val | Met | Glu | Ser | Val | Val |
|     |     |     | 195 |     | 200 |     |     |     |     |     | 205 |     |     |     |     |
| Pro | Ser | Asp | Arg | Gly | Asn | Tyr | Thr | Cys | Val | Val | Ala | Asn | Lys | Tyr | Gly |
|     |     |     | 210 |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Thr | Ile | Arg | Glu | Thr | Tyr | Thr | Leu | Asp | Val | Leu | Glu | Arg | Thr | Pro | His |
|     |     |     | 225 |     | 230 |     |     |     |     | 235 |     |     | 240 |     |     |
| Arg | Pro | Ile | Leu | Gln | Ala | Gly | Phe | Arg | Ser | Asn | Lys | Thr | Val | Val | Val |
|     |     |     | 245 |     | 250 |     |     |     |     |     |     | 255 |     |     |     |
| Gly | Ser | Asp | Val | Glu | Phe | His | Cys | Lys | Val | Tyr | Ser | Asp | Ala | Gln | Pro |
|     |     |     | 260 |     | 265 |     |     |     |     |     | 270 |     |     |     |     |
| His | Ile | Gln | Trp | Leu | Lys | His | Val | Glu | Val | Asn | Gly | Ser | Lys | Phe | Gly |
|     |     |     | 275 |     | 280 |     |     |     |     |     | 285 |     |     |     |     |
| Pro | Asp | Gly | Asn | Pro | Tyr | Val | Thr | Val | Leu | Lys | Thr | Ala | Gly | Val | Asn |
|     |     |     | 290 |     | 295 |     |     |     |     |     | 300 |     |     |     |     |
| Thr | Ser | Asp | Lys | Glu | Leu | Glu | Ile | Gln | Phe | Leu | Arg | Asn | Val | Thr | Phe |
|     |     |     | 305 |     | 310 |     |     |     |     | 315 |     |     | 320 |     |     |
| Glu | Asp | Ala | Gly | Glu | Tyr | Thr | Cys | Leu | Ala | Gly | Asn | Ser | Ile | Gly | Tyr |
|     |     |     | 325 |     | 330 |     |     |     |     |     |     | 335 |     |     |     |

Ser His His Ser Ala Trp Leu Thr Val Leu Pro Pro Ala Glu Pro Val  
 340 345 350  
 Pro Asp Val Asp Thr Ser Val Ser Ile Leu Ala Ala Ala Gly Cys Val  
 355 360 365  
 Ala Val Val Ile Leu Val Val Ile Ile Ile Phe Thr Tyr Lys Met Lys  
 370 375 380  
 Met Pro Ser Lys Lys Thr Met Asn Thr Ala Thr Val His Lys Val Ser  
 385 390 395 400  
 Lys Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ser Ser Met  
 405 410 415  
 Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Arg Leu Ser Ser Ser Asp  
 420 425 430  
 Gly Pro Met Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro  
 435 440 445  
 Lys Trp Glu Leu Ser Arg Ser Arg Leu Thr Leu Gly Lys Pro Leu Gly  
 450 455 460  
 Glu Gly Cys Phe Gly Gln Val Val Met Ala Asp Ala Val Gly Ile Glu  
 465 470 475 480  
 Lys Asp Lys Pro Asn Lys Ala Thr Ser Val Ala Val Lys Met Leu Lys  
 485 490 495  
 Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu  
 500 505 510  
 Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly  
 515 520 525  
 Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ser  
 530 535 540  
 Lys Gly Asn Leu Arg Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Met  
 545 550 555 560  
 Asp Tyr Ser Phe Asp Thr Cys Lys Leu Pro Glu Glu Gln Leu Thr Phe  
 565 570 575  
 Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr  
 580 585 590  
 Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val  
 595 600 605  
 Leu Val Thr Asp Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala  
 610 615 620  
 Arg Asp Val His Asn Ile Asp Tyr Tyr Lys Thr Thr Asn Gly Arg  
 625 630 635 640  
 Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr  
 645 650 655  
 Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile  
 660 665 670  
 Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu  
 675 680 685  
 Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys  
 690 695 700  
 Thr His Glu Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Val Pro  
 705 710 715 720  
 Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val  
 725 730 735  
 Leu Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe  
 740 745 750  
 Glu Gln Tyr Ser Pro Ala Cys Pro Asp Ser His Ser Ser Cys Ser Ser  
 755 760 765  
 Gly Asp Asp Ser Val Phe Ala His Asp Leu Pro Glu Glu Pro Cys Leu  
 770 775 780  
 Pro Lys His Gln Gln Tyr Asn Gly Val Ile Arg Thr  
 785 790 795

&lt;210&gt; 27

&lt;211&gt; 2403

&lt;212&gt; DNA

&lt;213&gt; Danio rerio

&lt;400&gt; 27

|            |             |             |              |              |             |      |
|------------|-------------|-------------|--------------|--------------|-------------|------|
| atggtcccac | tctgtctcct  | cctgtacctc  | gcaaccctcg   | tcttcccacc   | agtgtacagt  | 60   |
| gcacacctgc | tgtccccaga  | gcccacagac  | tgggtatcga   | gtgagggtgga  | agtgtttctg  | 120  |
| gaggactatg | tgccgggagt  | cgggataca   | gtagttctgt   | cctgcacgcc   | gcaagacttt  | 180  |
| ctcctccca  | tcgtatggca  | aaaagacgga  | gacgccgtt    | cttcaagcaa   | ccgtacacga  | 240  |
| gtggccaga  | aagccctccg  | catcatcaat  | gtctcctatg   | aagactcggg   | tgtttactcc  | 300  |
| tgcagacatg | cccacaagag  | catgcttctg  | agcaactaca   | ccgtcaaagt   | catcgattcg  | 360  |
| ctgtcctctg | gtgatgtatg  | ggactatgtat | gaagatgagg   | acgaggcagg   | taatggaaat  | 420  |
| gcagaagctc | catactggac  | ccgttccggac | cggatggaga   | agaaactatt   | ggctgttcct  | 480  |
| gctgccaata | cagtcaagtt  | ccgctgtcct  | gctgctgca    | acccaacgccc  | cagtatccat  | 540  |
| tggctaaaa  | atggcaagga  | gttcaaggga  | gagcagagaa   | tggccggcat   | taagctgagg  | 600  |
| catcagcgt  | ggagcttgg   | catggagagt  | gccgttccat   | ccgaccgggg   | aaattacaca  | 660  |
| tgttgttgc  | agaacaaaata | cgggtcaatc  | aagcacact    | atcaactcga   | tgtgtggag   | 720  |
| cgctccccc  | accggcccat  | tttacaggca  | ggactgcccag  | ccaatcagac   | ggttagtggg  | 780  |
| ggcagtatg  | tggagttca   | ctgtaaagggt | tacagtatgt   | ctcagccaca   | catccagtgg  | 840  |
| ctgaaacaca | ttgaagtcaa  | ttgaagccaa  | tatgggccc    | atggccccc    | ctacgtcaat  | 900  |
| gttctaaga  | ctgctggat   | aaataactacg | gataaagagc   | tggagattct   | ctacgtgacc  | 960  |
| aatgtgtctt | tcgaggatgc  | ggggcaatac  | acttgcgttg   | cagggaaactc  | gattggctat  | 1020 |
| aaccatca   | ctgcttggt   | tacagtctta  | ccagcgggtgg  | agatggagag   | agaggatgtat | 1080 |
| tatgcagaca | tcctcatcta  | tgtgacaagc  | tgcgtgtct    | tcattctcac   | catggtcata  | 1140 |
| attattctct | gccgaatgt   | gataaacacg  | cagaagactc   | tcccgccacc   | acctgttcaa  | 1200 |
| aaactgtcca | aattccccct  | caagagacag  | gtgtccttgg   | aatccaaactc  | ttccatgaat  | 1260 |
| tcaaacaccc | cgctggtcag  | gatcgcccgc  | ctgtcatcca   | gcgtatgggccc | gatgttgcc   | 1320 |
| aacgtgtctg | aacttgaact  | gccctctgac  | cccaagtggg   | agtttactcg   | aacaaagtt   | 1380 |
| acgttgggaa | aaccgttggg  | agagggctgc  | tttgggcaagg  | tggatgtggc   | tgaagccatt  | 1440 |
| gggattgaca | aagaaaaacc  | caacaaacct  | ctaactgttg   | ctgtcaagat   | gctcaaagat  | 1500 |
| gacggcacag | ataaaagacct | gtcagacctt  | gtgtctgaaa   | tggagatgtat  | gaagatgatt  | 1560 |
| gggaaacata | agaacatcat  | taacttgcgt  | ggagcatgta   | ctcaagacgg   | tcctctgtac  | 1620 |
| gtgctggtag | aatacgccctc | taaagggat   | cttagggat    | actacgagc    | cagaaggcca  | 1680 |
| cctggatgg  | actacttac   | cgacacctgt  | aagatcccg    | acgaaacgct   | aacatttaaa  | 1740 |
| gacctgggt  | cctgcgccta  | tcaggtcgcc  | aggggtatgg   | agtagctggc   | ctcaaagaag  | 1800 |
| tgtatccata | gggaccggc   | agcccgaaat  | gttctggta    | ccgaggacaa   | cgtatgaag   | 1860 |
| atgcagact  | tcggccttgc  | cagagatgt   | cacaacatttgc | actactacaa   | gaagaccacc  | 1920 |
| aacggctgtc | tcggcgttca  | atggatggca  | ccagaaggcac  | tgttcgatcg   | cgtctacacg  | 1980 |
| caccagagcg | atgtgtggc   | ttatgtgtg   | ttgttgggg    | agattttcac   | tcttgggta   | 2040 |
| tccccgtatc | caggtatccc  | agtggaggag  | ctctttaaac   | tgctgaagga   | aggccatcg   | 2100 |
| atggacaaac | cggccaaactg | cactcatgaa  | ctgtacatga   | tcatgcgaga   | atgttggcat  | 2160 |
| gctgtccctt | cacaaagacc  | cacgttccaga | cagctgggg    | aggaccacga   | cagggttctt  | 2220 |
| tccatgacct | ccactgacga  | gtacccggac  | ctctctgtac   | cgttcgagca   | gtattcaccg  | 2280 |
| acctgtccgg | actccaacag  | cacgttcc    | tctggcgtat   | actctgtgtt   | tgcccacgac  | 2340 |
| cccttacctg | aggagccatg  | cctccctaaa  | caccaccaca   | gcaacgggg    | catacgaaca  | 2400 |
| taa        |             |             |              |              |             | 2403 |

&lt;210&gt; 28

&lt;211&gt; 800

&lt;212&gt; PRT

&lt;213&gt; Danio rerio

&lt;400&gt; 28

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Leu | Cys | Leu | Leu | Tyr | Leu | Ala | Thr | Leu | Val | Phe | Pro |     |
| 1   |     |     |     | 5   |     |     | 10  |     |     | 15  |     |     |     |     |     |
| Pro | Val | Tyr | Ser | Ala | His | Leu | Leu | Ser | Pro | Glu | Pro | Thr | Asp | Trp | Val |
|     |     |     |     |     | 20  |     |     | 25  |     |     | 30  |     |     |     |     |
| Ser | Ser | Glu | Val | Glu | Val | Phe | Leu | Glu | Asp | Tyr | Val | Ala | Gly | Val | Gly |
|     |     |     |     |     | 35  |     |     | 40  |     |     | 45  |     |     |     |     |
| Asp | Thr | Val | Val | Leu | Ser | Cys | Thr | Pro | Gln | Asp | Phe | Leu | Leu | Pro | Ile |
|     |     |     |     |     | 50  |     |     | 55  |     |     | 60  |     |     |     |     |
| Val | Trp | Gln | Lys | Asp | Gly | Asp | Ala | Val | Ser | Ser | Ser | Asn | Arg | Thr | Arg |
|     |     |     |     |     | 65  |     |     | 70  |     |     | 75  |     |     | 80  |     |
| Val | Gly | Gln | Lys | Ala | Leu | Arg | Ile | Ile | Asn | Val | Ser | Tyr | Glu | Asp | Ser |
|     |     |     |     |     | 85  |     |     | 90  |     |     | 95  |     |     |     |     |
| Gly | Val | Tyr | Ser | Cys | Arg | His | Ala | His | Lys | Ser | Met | Leu | Leu | Ser | Asn |
|     |     |     |     |     | 100 |     |     | 105 |     |     | 110 |     |     |     |     |

Tyr Thr Val Lys Val Ile Asp Ser Leu Ser Ser Gly Asp Asp Glu Asp  
 115 120 125  
 Tyr Asp Glu Asp Glu Asp Glu Ala Gly Asn Gly Asn Ala Glu Ala Pro  
 130 135 140  
 Tyr Trp Thr Arg Ser Asp Arg Met Glu Lys Lys Leu Leu Ala Val Pro  
 145 150 155 160  
 Ala Ala Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr  
 165 170 175  
 Pro Ser Ile His Trp Leu Lys Asn Gly Lys Glu Phe Lys Gly Glu Gln  
 180 185 190  
 Arg Met Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met  
 195 200 205  
 Glu Ser Ala Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Gln  
 210 215 220  
 Asn Lys Tyr Gly Ser Ile Lys His Thr Tyr Gln Leu Asp Val Leu Glu  
 225 230 235 240  
 Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Gln  
 245 250 255  
 Thr Val Val Val Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser  
 260 265 270  
 Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Glu Val Asn Gly  
 275 280 285  
 Ser Gln Tyr Gly Pro Asn Gly Ala Pro Tyr Val Asn Val Leu Lys Thr  
 290 295 300  
 Ala Gly Ile Asn Thr Thr Asp Lys Glu Leu Glu Ile Leu Tyr Leu Thr  
 305 310 315 320  
 Asn Val Ser Phe Glu Asp Ala Gly Gln Tyr Thr Cys Leu Ala Gly Asn  
 325 330 335  
 Ser Ile Gly Tyr Asn His His Ser Ala Trp Leu Thr Val Leu Pro Ala  
 340 345 350  
 Val Glu Met Glu Arg Glu Asp Asp Tyr Ala Asp Ile Leu Ile Tyr Val  
 355 360 365  
 Thr Ser Cys Val Leu Phe Ile Leu Thr Met Val Ile Ile Ile Leu Cys  
 370 375 380  
 Arg Met Trp Ile Asn Thr Gln Lys Thr Leu Pro Ala Pro Pro Val Gln  
 385 390 395 400  
 Lys Leu Ser Lys Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn  
 405 410 415  
 Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser  
 420 425 430  
 Ser Ser Asp Gly Pro Met Leu Pro Asn Val Ser Glu Leu Glu Leu Pro  
 435 440 445  
 Ser Asp Pro Lys Trp Glu Phe Thr Arg Thr Lys Leu Thr Leu Gly Lys  
 450 455 460  
 Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile  
 465 470 475 480  
 Gly Ile Asp Lys Glu Lys Pro Asn Lys Pro Leu Thr Val Ala Val Lys  
 485 490 495  
 Met Leu Lys Asp Asp Gly Thr Asp Lys Asp Leu Ser Asp Leu Val Ser  
 500 505 510  
 Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn  
 515 520 525  
 Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr Val Leu Val Glu  
 530 535 540  
 Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr Leu Arg Ala Arg Arg Pro  
 545 550 555 560  
 Pro Gly Met Asp Tyr Ser Phe Asp Thr Cys Lys Ile Pro Asn Glu Thr  
 565 570 575  
 Leu Thr Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly  
 580 585 590  
 Met Glu Tyr Leu Ala Ser Lys Lys Cys Ile His Arg Asp Pro Ala Ala  
 595 600 605  
 Arg Asn Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe  
 610 615 620

35

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Ala | Arg | Asp | Val | His | Asn | Ile | Asp | Tyr | Tyr | Lys | Lys | Thr | Thr |
| 625 |     |     |     |     | 630 |     |     |     | 635 |     |     |     |     |     | 640 |
| Asn | Gly | Arg | Leu | Pro | Val | Lys | Trp | Met | Ala | Pro | Glu | Ala | Leu | Phe | Asp |
|     |     |     |     |     |     | 645 |     |     | 650 |     |     |     |     | 655 |     |
| Arg | Val | Tyr | Thr | His | Gln | Ser | Asp | Val | Trp | Ser | Tyr | Gly | Val | Leu | Leu |
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| Trp | Glu | Ile | Phe | Thr | Leu | Gly | Gly | Ser | Pro | Tyr | Pro | Gly | Ile | Pro | Val |
|     |     |     |     |     | 675 |     |     | 680 |     |     | 685 |     |     |     |     |
| Glu | Glu | Leu | Phe | Lys | Leu | Leu | Lys | Glu | Gly | His | Arg | Met | Asp | Lys | Pro |
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|     |     |     |     |     | 705 |     |     | 710 |     |     | 715 |     |     |     | 720 |
| Ala | Val | Pro | Ser | Gln | Arg | Pro | Thr | Phe | Arg | Gln | Leu | Val | Glu | Asp | His |
|     |     |     |     |     | 725 |     |     | 730 |     |     |     |     | 735 |     |     |
| Asp | Arg | Val | Leu | Ser | Met | Thr | Ser | Thr | Asp | Glu | Tyr | Leu | Asp | Leu | Ser |
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| Cys | Ser | Ser | Gly | Asp | Asp | Ser | Val | Phe | Ala | His | Asp | Pro | Leu | Pro | Glu |
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| Glu | Pro | Cys | Leu | Pro | Lys | His | His | His | Ser | Asn | Gly | Val | Ile | Arg | Thr |
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